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"Paris."

THE work by Mr. Hare, which has recently appeared under this title,* is obviously inspired by the *Guide Joanne*, with the difference that the latter proceeds by classifications, while the author of the book before us follows a route through the city, noting the objects of interest by the way. The information is apparently drawn from good sources, but it is to be regretted that Mr. Hare does not seem sufficiently awake to the fact that Paris is in a state of perpetual change, and that the descriptions of yesterday will not answer for to-day.

There are inaccuracies also of another kind to be noticed. Mr. Hare seems to have studied Parisian life through the small end of a telescope, and follows the old idea that everything there is sacrificed to pleasure, and that Parisian life is a perpetual fête. The opinion of Voltaire, which he cites to that effect, is somewhat out of date for the present day. Paris has suffered terribly of late years from political and financial crises and from revolutions; and modern Paris no more resembles the Paris which Mercier depicted in 1782, than modern London resembles the London of the Stuarts or of Queen Anne. Mr. Hare's book, however, may serve as a text for a few remarks on the Paris of to-day, in the course of which we can take occasion to point out some of the errors which detract from the value of an otherwise readable and interesting book.

The arrondissements of Paris, in their administrative grouping, describe a kind of spiral, beginning at the head of the City and curving outwards towards the circumference. This is pretty nearly the order followed by the author of "Paris," at least in regard to the Right Bank; for the Left Bank is oddly neglected where it extends beyond the line of the author's peripatetics. In his first chapter the author starts from the Tuileries, of which he gives the history. But the description of the Gardens is very deficient. He only mentions two or three statues, omitting Barye's Lion, the Hercules of Bosio, the Pheidias of Pradier, &c. Speaking of the Louvre he mentions incidentally the legend, now definitely discredited, about the window whence Charles IX. fired on the Huguenots; and on arriving at the Place du Carrousel he passes over in silence the monument to Gambetta, and forgets to say that the three arches called "les guichets des Saints Pères" are modern, and bear the name of Lefuel, who built them.

We then turn into the Louvre, where, speaking of the "Galerie d'Apollon," Mr. Hare says:—"This magnificent gallery, decorated with paintings by Lebrun and stuccoed ornaments by Girardon and other great masters," without a word for the admirable ceilings by Delacroix (a greater artist than either of the former), which are, in fact, his *chef d'œuvre*. With the exception of this curious omission, all that relates to the Louvre is very correct and very carefully done.

Coming out from the Louvre, opposite the famous colonnade by Perrault, we enter St. Germain l'Auxerrois, in which the grille of the choir, a work of the famous Pierre Dumiez, is justly described as "one of the best pieces of metal-work of the last century." We look in vain, however, for any mention of the tower of St. Germain, built by Ballu, in the style of the church, and of the Mairie of the First Arrondissement, the pretentious architecture of which asserts itself as a pendant to the church. The Imperial Administration is accused of having scraped the ancient façade of St. Germain to make it harmonise with the new Mairie, a piece of administrative Vandalism which need not surprise us.

The second chapter takes us forward "into Old Paris," where Mr. Hare pauses before the Church of St. Roch, "of which Louis XIV. laid the foundation-stone in 1633." This is certainly a mistake, since that monarch was born in 1638. Apart from this anachronism, the description of the monument is excellent. Retracing our steps, we come to the statue of Joan of Arc, in the *place* named after her, which is not by Fremiot, but by M. Fremiet, a name sufficiently known to our readers.

To the right of the Rivoli arcades we come on the Place du Palais Royal, which Mr. Hare erroneously calls "Place Royal." The *place* which formerly bore that name is now called Place des Vosges. These and other slips might easily have been avoided. Every one knows, for instance, that Jean Jacques Rousseau was born at Geneva in 1712, and not at Paris in 1622. A street in the Palais Royal bears his name merely because he lived there in 1776.

Near the Oratory,—now become a Protestant church,—is the celebrated fountain of Arbresec; "a nymph between the windows on the first floor is by Jean Goujon": another mistake. The bas-relief is much more recent: it dates from 1776, and is by Simon Boizot, a pupil of Slotz.

Leaving on one side the Halle au Blés, which M. Blondel is just now transforming into a Bourse, the Halles Centrales (of which Zola has given such a vivid description), and the Fontaine des Innocents framed in the green grass of the square, we are at the Church of St. Eustache, "begun in 1532, and completed in 1642 by the architect David." Why not have added the more interesting fact that it was commenced by the celebrated architect of the Hôtel de Ville, Dominique de Cortone, called "le Boccador"? We note in turn the Rue des Lombards, and the Church of St. Merri, in which Mr. Hare has evidently not seen the admirable paintings of Theodore Chasseriau, representing the life of St. Marie the Egyptian. Thence we take a circuit through some narrow and winding streets bordering on the Hôtel de Ville,—Rue Quincampoix, Rue de Venise, Rue Maubuée, Rue St. Merri, &c.

At page 135 is another mistake in regard to the Rue de Montmency, which joins the Rue St. Martin to the Rue du Temple, and in which the author cites the house of the Minister Desmarest, "opposite the entrance to the Passage des Panoramas." Now, the passage which bears that name is in the Quartier Vivienne, and opens on the Boulevard Montmartre beside the Théâtre des Variétés, and opposite the Passage Jouffroy. Mr. Hare has evidently confounded it with the little Passage de l'Ancre, which certainly does merit that honour.

In re-ascending the Rue St. Martin, let us enter for an instant the church of St. Nicholas des Champs, where works of art, ancient and modern, are not wanting. Among the latter may be mentioned the St. Vincent of Paul of Bonnat, and the St. Bruno, by J. P. Laurens. We reach afterwards the Conservatoire des Arts et Métiers, preceded by a square, of which "Paris" makes no mention, and which is ornamented with a column surmounted by a Victory. This statue, the work of Crank, celebrates the campaign in Italy in 1859, Thence we return by the Rue de Rambuteau towards the fine Hôtel Soubise, where are kept the national archives, a very interesting description of which precedes that of the Prison du Temple, which has given place to an old-clothes mart. In the Square du Temple (also forgotten by the author) we find the statue of Béranger, by Doublemard; the "Retiarius"

* Paris. By Augustus J. C. Hare, Author of "Walks in London," "Walks in Rome," &c. London: Smith, Elder, & Co. 1887.

of Noel, and the "Age sans Pitié" of Schœnewerk.

The third chapter is devoted to the quarters in the neighbourhood of the Hôtel de Ville, which are no more such deserts as in the time of Balzac, and the Rue de Normandie no longer sees "fleurir l'herbe entre ses pavés." The old mansions of the Marais are on the whole carefully studied, with the exception of some mistakes in proper names.

After a considerable détour in this quarter, rich in recollections, we are conducted to the Carnavalet, of the history of which we gave a description some time ago. From thence to the Place des Vosges is but a step. There, in the centre of a garden surrounded by arcades, is raised *not* the statue of Charles X., as Mr. Hare tells us, but that of Louis XIII. by Cortot (not Carot), erected in the reign of Charles X., of which latter king there is no statue in Paris.

We come now to the Place de la Bastille, the column of which Victor Hugo compared to a gigantic stove with its chimney. We may complete that fantastic description of the work of Duc with the remark that the statue surmounting it is by Dumont, while the lion on the pedestal is by Barye. Returning towards the Hôtel de Ville, we find the old convent of the Celestins now become a barrack of the Municipal Guard. Mr. Hare does not say that the Boulevard Henri IV. cut it in two, nor does he mention the well-known frescoes of the Lycée Charlemagne; but his description of the Church of St. Paul is very accurate.

The Church of St. Gervais has justly attracted the author's attention; but he attributes to Jacques de Brosse the portal, which was really designed by Salomon de Brosse. This is a very remarkable church. From one side of it opens the beautiful Chapelle Scarron, the decoration of which dates from the end of the seventeenth-century. Among its numerous works of art Mr. Hare mentions a crucifix attributed to Albert Dürer, but of which the real author was his pupil Aldegräver, born in 1502 and who died in 1562.

"We now reach the Hôtel de Ville, rebuilt by Ballu & Deperthes after the destruction of its more magnificent predecessor during the reign of the Commune." In spite of a great display of historic details, these two lines form a very dry and incomplete descriptive statement about one of the most important architectural works of our time. The vast size of the building, its decorative richness, and the interest which attaches to it as the centre of the municipal life of Paris, do not detain Mr. Hare an instant, nor the architectural treatment of the great staircases and of the long suites of galleries, nor the sculptures by some of the most eminent artists of the day: nearly all these are passed over in silence, "and now the magnificent Tour St. Jacques rises before us"; but as the tower was completely restored by Ballu, we must enlighten Mr. Hare as to his illusion about the age of the statues which crown it. They are not the works of Rault, destroyed long since; they are the very modern work of M. Chenillon, a pupil of David d'Angers. It is the same with the Pont au Chauze, which is not the one "rebuilt in 1639," and which was lined with houses, but a bridge built in 1858-1859.

A little further rises the Fontaine du Châtelet or de la Victoire, the work of Bralle, decorated by Boizot and later by Jacquemart. "This is the point," says Mr. Hare, "where curious visitors usually enter subterranean Paris" (to inspect the sewers). Yes, and no. It is here that, on visiting days, those who have the official permit of the Prefect of the Seine are ranged in two ranks. The one descends in the Place du Châtelet to re-issue on the Place St. Augustin, where the second party descend in their turn and take their place on the travelling wagons which will take them to the Place du Châtelet, after having crossed in a boat, at the level of the Place de la Concorde, the great collecting sewer of the right bank.

Mr. Hare has also forgotten to note in the Place du Châtelet the Théâtre Lyrique, provisionally occupied by the Opéra Comique company, and on the opposite side the Théâtre du Chatelet, the immense stage of which lends itself so well to the development of military pieces and spectacular dramas. Both are the work of M. Davioud.

The fine spectacle of the quays and bridges on the Seine has served Zola for the theme of a brilliant literary fantasia, which Mr. Hare reproduces in his pages. It might have been better to have given the correct names, and a little of the history of the numerous bridges.

In Chapter IV. we are taken round a needless turn through the Faubourg St. Antoine to gain the Père Lachaise, when the Rue St. Antoine would have taken us direct by the Rue de la Roquette, passing, in the Place Voltaire, before the statue of Ledru Rollin. The description of the great necropolis is pretty complete, except that Mr. Hare forgets the crematorium constructed on the highest ground, next the Mussulman cemetery. We are here in the middle of the suburbs of Charonne and Ménilmontant, "once looked on as a tempting place of residence." We may add that it was formerly the quarter of the St. Simonians, whose estate is now occupied by an orphanage. In the lower part of the Rue Ménilmontant is a very fine church called Notre Dame de la Croix, built in 1865-70, by M. Héret. It stands on a double terrace, with flights of steps before it. The building, in the Roman style and of monumental proportions, stands over an immense crypt.

Issuing from Père Lachaise the author takes us by the Avenue Philippe Auguste towards the Rue de Charonne, on the way to the Rue St. Bernard. The détour is a little long, and causes him to forget St. Germain de Charonne, the construction of which dates from the fifteenth century. In the Église St. Marguerite, which we pass on the way, we may note a portrait of Anne of Austria, by Frère André, and various pictures by Restout and Lagrenée.

A new and equally unexpected twist in the route brings us to the Place du Trône. Mr. Hare is apparently not aware that since 1879 this has been called "Place de la Nation." It is in the centre of this *place* that the colossal group by M. Dalou is to be erected, of which we some time since gave an illustration. This *place* has one point of architectural interest, in that there are remaining two of the pavilions called "Des Fermiers Généraux," constructed at all the gates of Paris by Ledoux. The only ones besides these which now exist are in the Place Denfert-Rochereau, at La Villette, and at the Parc Monceau.

Returning to the Bastille by the Rue de Charenton, we find the sombre prison Mazas at the angle of the boulevard of that name with the Rue de Lyon. Opposite is the Paris-Lyon-Mediterranée railway terminus, of which no mention is made, though it conducts to those places dear to English visitors,—Nice, Cannes, and Mentone. The Rue de Lyon has direct communication with the Place de la Bastille, where is the Gare de Vincennes.

In Chapter V. we come on the islands of the Seine, commencing with La Cité, where Mr. Hare takes us by the Pont Neuf, the guard-house of which, indicated as "near the statue of Henri IV.", has long ceased to exist. By the side of the bridge stood lately, on the Place Dauphine (now enlarged and transformed), the monument of General Desaix, now destroyed. Opposite is the façade of the Palais de Justice, which Mr. Hare persists in calling "Palais de la Cité," a title absolutely unknown to Parisians. Here, again, the author of "Paris" sacrifices description to "history." He says nothing about the "Grande Chambre de Parlement," decorated by Fra Giovanni Giocondo, whom Louis XII. brought from Italy, and which was so admirably restored by Duc and Daumet; nothing about the splendid grille executed from the designs of the architect Antoine in 1772, the gold fleur-de-lys and escutcheons of which were restored by Duc in 1878. It was mainly because he had so scrupulously respected these attributes of royalty that the Municipal Council for a long time refused to erect to the memory of the eminent architect the monument which has now been executed by Chapu. The same silence about the paintings of Olivier Merson, in the Galerie St. Louis. Mr. Hare commits, besides, a great error in saying (page 272) that "the parasite buildings, the conciergerie, and the Prefecture of Police are now annexed to the Palais de Justice." The Prefecture of Police occupies the barracks of La Cité; and the building on the Quai d'Orsay, of which he speaks, has been given up for ten years past to the Cour d'Appel. We add something also to the information as to "the cell in which Marie Antoinette suffered her seventy-five days' agony." This cell, transformed into a chapel, contains several paintings worth note: "La Communion de la Reine," by Drolling; "La Reine separée de sa Famille," by Pajou; and the portrait of the Queen, by Simon.

In regard to the Sainte Chapelle, it would also be as well to add that Duban and Lassus were commissioned, in 1837, to restore it. Lassus reconstructed the flêche in 1852. M. Bœswilwald completed this important restoration, with the aid of four sculptors, MM. De la Rue, Pascal, Perrey, and Geoffrey Déchaumè. It was the last-named who modelled the statue of St. Michael placed above the roof of the apse. The windows have been classified and put in order by M. Guillarmy.

It may be added that the works of the Palais de Justice were commenced in 1840, and have been in continuation up to the present day, at a cost of over thirty millions of francs. Thirteen millions are still required to defray the cost of completing it.

We are now in the very heart of Paris. Mr. Hare wrongly calls the central street of the Ile de la Cité, Avenue de Constantine; it has for the last seven years borne the name of the Rue de Lutèce. He neglects also too much the new Hôtel Dieu, and says nothing of the colossal statue of Charlemagne which stands before Notre Dame. Of this last building, however, he gives a very complete description, supported by passages from those authors who have best known and loved the old cathedral, Viollet-le-Duc and Victor Hugo, and who have described it, the one with the knowledge of an artist, the other with the language of a poet.

Opposite the Palais de Justice, at the angle of the Boulevard du Palais and of the Quai aux Fleurs, rises the Tribunal of Commerce, of which no mention is made in "Paris." We will not here go into a description of this fine edifice, the work of M. Bailly, which covers the space formerly occupied by the Church of St. Pierre d'Arcis, of which Mr. Hare speaks. We may mention only its splendid staircases, the Salle d'Audience decorated by Robert Fleury, and the glazed court, the design of which recalls the ancient atrium.

By the Church of Notre Dame, in a square adorned with a Gothic fountain erected by Vigoureux and decorated by the sculptor Merlieux, stood formerly the archiepiscopal palace, sacked in 1831, and of which no trace remains. Behind this square is the Morgue. "The clothes in which the bodies are found are removed, which is, perhaps, the reason why mistakes are frequently made." This remark is incorrect, for now the bodies remain clothed as they were found: a powerful refrigerating apparatus permits of their being preserved for a long time, which facilitates judicial inquiries and the recognition of bodies.

We pass next to the Isle St. Louis, the aspect of which differs essentially from that of the rest of Paris. The houses, the shops, the inhabitants themselves, recall the old towns of the provinces. It contains only one church, which Jacques Doucet completed in 1726, and of which all the sculpture was executed after the designs of Philippe de Champaigne. At the extreme point of the Isle rises the celebrated Hôtel Lambert, mentioned by Mr. Hare, and which is inhabited by Prince Czartoriski, son-in-law of the Duc de Némours. It was in the Isle de St. Louis that there took place in the Middle Ages the famous combat between the chevalier Macaire and the dog of Montargis,—not of "Montereau," as Mr. Hare gives it.

The Faubourg St. Marcel, which is the principal subject of Chapter VI., is not in our days what it was in 1782, in the time of Mercier,

from whom Mr. Hare cites a severe stricture. The existing "quartier" differs in no respect from other artisan quarters in Paris. The tannery industry flourishes here; the poverty here is, no doubt, greater than in the eighth and ninth arrondissements; but the Parisian "ouvrier" is pretty much the same everywhere, here or in the arrondissements of the north of Paris. The author, in fact, goes back a century here; and the same observation applies to the Rue St. Jacques, which is no more what Balzac described it, and is as busy and full of life as the Rue St. Denis or any other old street in Paris.

Let us say a complimentary word for the Jardin des Plantes, the description of which is very incomplete. The new buildings constructed by M. André are particularly noticeable, with their monumental façade and long galleries in which, two years ago, the centenary of Chevreuil was celebrated. At the extremity of the garden, near the Hospital de la Pitié, is a labyrinth with a Belvedere from which, on fine days, a splendid view is obtained. It is here that there stands the famous cedar of Lebanon planted in 1735.

Leaving the Jardin des Plantes, Mr. Hare takes us to the Saltpêtrière, "a hospital for old men and women"; a mistake, for this is a hospital for female incurables, as that of Bicêtre is for males. Before it is the statue of Pinel, the celebrated lunatic doctor. Further off is the horse-market, rebuilt here in 1877; and still further up the Gobelins manufactory, which is too small for its requirements, and the rebuilding of which the Government keeps continually delaying. We will not, like Mr. Hare, forget the Parc de Montsouris, in which the meteorological observatory is situated, nor the immense reservoirs of La Vanne, which supply part of Paris, nor the Mairie of the thirteenth arrondissement, decorated by Gustave Boulanger with a painted frieze in which we see the portraits of a certain number of modern celebrities (Cabanel, Guillaume, Bouguereau, Dumas fils, Arago, Charles Garnier, &c.). Not far from here is the ancient Church of St. Médard, celebrated by the "convulsionnaires" of the last century, and containing a charming little picture which Mr. Hare erroneously attributes to Watteau.

We will say nothing more of Val de Grâce, of which we have given not very long since a pretty complete description, but pause a few moments at the Catacombs, visible the first and third Saturdays in the month. We descend by a staircase behind one of the old pavilions "des fermiers généraux," before referred to. Mr. Hare, who neglects to mention the garden of lilacs dear to connoisseurs under the name of "Val Bullier," goes a terrible way back in speaking of the Grande Chaumière as one of the oldest of the Parisian dancing-gardens," it having ceased to exist for at least thirty years!

With Chapter VII. we come into the heart of the old Quartier Latin, where the Rue des Écoles and the Rue Morgue "have recently put old Paris to flight." The transformation of the Quartier is not quite so "recent" as Mr. Hare thinks, for the Boulevard St. Michel, the "boul' Mich" as the students call it, dates from 1859. At the top of the hill scored with narrow streets, rises the imposing mass of the Panthéon, decorated by Puvis de Chavannes, Cabanel, J. Paul Laurens, Théodore Maillot, Lévy, Joseph Blanc, Humbert, and Delaunay. Since its deconsecration in 1885 the Panthéon seems more cold and deserted than ever; it is neither a church nor a museum, nor a funeral monument, and the public are always in doubt whether they ought or ought not to take off their hats and speak low as if they were in church.

In the Lycée Henri IV. adjoining, of which mention is made, is to be found a fine ceiling, designed by Restout, which is to be restored. In the neighbouring Church of St. Etienne du Mont, "Paris" forgets to mention the two splendid paintings, by Largillière and De Troy, given by the Municipality in 1745.

We will pass over the École de Droit and the new Sorbonne, already described in the *Builder*, and the Musée Cluny, of which Mr. Hare gives a very good account. In Chapter VIII., before reaching the Faubourg St. Germain, we are brought back towards the Pont des Saints-Pères, the four seated statues of which are by Petilot. We will make a short halt here at the École des Beaux-Arts, which is enlarging itself by the acquiring of the Hôtel de Climay on the Quai Malaquais. Mr. Hare does justice to the Cour du Mûrier, a delightful umbrageous retreat. In a corner of the cloister which surrounds it, the "Jeunesse" of Chapu stretches a branch of laurel towards the bust of Henri Regnault, by Degeorge. The monument is the work of M. Coquart. Let us not forget either the fifty-two copies of the loggie of Raffaelle, executed by the frères Balze under the direction of Ingres; nor the Salle Melpomène, nor the hemicycle of Delaroche, nor the ancient chapel, transformed into a museum of Renaissance work, and decorated by Sigalon with a copy of the "Last Judgment" of Michelangelo.

Not far off "an admirable statue of Voltaire" is noted; a little too enthusiastic a phrase, Mr. Hare, for Caillé's very mediocre work on its overgrown pedestal. The "République" of Soitoux, a little further on, in front of the Institut, is a far more remarkable work, whereof the author says nothing.

We may mention, in reference to the Luxembourg, an error which is very common; it was not Jacques but Salomon de Brosse who built this palace. He was nephew of Jacques Androuet du Cerceau, to whom he succeeded as architect to Marie de Medicis. It was a Jean de Brosse, presumably a brother of Salomon, who was architect to Marguerite, wife of Henri IV.

It is a pity that Mr. Hare should have incorporated in his notes on the Luxembourg the apocryphal souvenirs of the Marquise de Créqui (page 408). These pretended memoirs were for a long time taken seriously, and the *Quarterly Review* in 1834 devoted a long critique to them. But the Marquise de Créqui never wrote any memoirs, only some "Letters." We may add to the history of the Luxembourg the fact that after the Commune, the Prefecture of the Seine was installed in the palace, and remained there till 1879.

The description of the Church of St. Sulpice suggests another remark. Mr. Hare describes, as architects of the building, Garnard and Servandoni, which is true; but besides these two there was also Levau, who drew the plan of the new foundations in 1655, and then Daniel Gittard, who from 1672 to 1675 built the left arm of the cross, and after him Oppenordt, pupil of Mansard, continued the work. Servandoni himself was assisted by Benard. The towers of Servandoni not being approved of, Maclaurin was commissioned to build two others, which were no more satisfactory. Chalgrin re-designed the left one. The right is still in the state in which it was left by Servandoni and Maclaurin.

Passing over some other portions, as we have not space to follow the author through all his route, we may observe that Mr. Hare forgets the Esplanade des Invalides and the two neighbouring squares, and also passes over in silence the important decorative work of Delacroix in the Palais de Corps Législatif.

In the ninth chapter we come on the Place Vendôme, and then to the Rue Cambon, which Mr. Hare still calls the "Rue du Luxembourg." The Church of the Assumption, built for a convent of Augustinian nuns, he describes as "now a barrack": it is not; it is the depôt of the archives of the Ministry of Finance. Of the Champs Elysées he gives a description which is at least twenty-five years in arrear. Paris has changed greatly since then, and the promenade has no resemblance now to the spectacle it presented under the Second Empire; everything is "democratised," so to speak, the crowd of foot-passengers alone remaining much as it was. On the left of the Champs Elysées is the Château des Fleurs, "a place of public amusement." The public garden disappeared twenty years ago, at the same time as the Mabille. In the Avenue de l'Alma, Street's American church is apparently passed over as unworthy of notice; and Baltard's Church of St. Augustin in the faubourg of Batignolles is described as "the climax of vulgarity and bad taste." We had occasion some years ago to comment on Mr. Hare's singular vagaries of architectural criticism in his book on London; and his perceptions on this head do not seem to have progressed in the meantime. Ballu's Church of the Trinity is only just mentioned, but he dignifies by the title of an "admirable fountain" the poor little monument erected by Visconti in the Place Guillon in 1828.

In speaking of Montmartre we come across another error which is so far creditable to Mr. Hare, as it proves that during his stay in Paris he made no attempt to waste time in haunts of idle pleasure. The "dancing garden" of the Château Rouge, of which he speaks on p. 491, has been abolished for eighteen years. The Palais Royal, again, he tells us, "has always been celebrated for its restaurants and gaming tables." Good and well-known restaurants there are there, no doubt, but as for gambling-houses, it is half a century since a single one existed in the Palais Royal.

Mr. Hare's book, which we have followed as far as space allowed, is no doubt interesting and pleasantly written, but it is a pity its value is so seriously impaired by mistakes which might have been easily avoided. He has made the mistake of trusting too much to authorities which are ancient history now, while passing over without mention such quarters as Montrouge, La Glacière, Vaugirard, Grenelle, &c., which are apparently not in his books of reference. We are glad, however, to be able to praise the sketches with which the book is illustrated, which are both well executed and very faithful.

NOTES.

IT now seems probable that the question of cost of transit on English railways, to which we referred at length last week [p. 39], may come into prominence in connexion with a Bill which is being promoted by the National Sea Fisheries Protection Association. It will be remembered that the fish traffic was singled out by Lord Bramwell in his letter to the *Times* last year, to afford an illustration of his views upon preferential rates, and it appears that this particular industry has now determined upon introducing a Bill of its own for regulating this traffic. The question was discussed at a meeting of the Council held last week, Sir E. Birkbeck (who introduced the subject) remarking that some of the provisions of the measure would cause astonishment and consternation among railway officials. We have not seen a draft of the Bill, but this points to a rather radical measure, in which, possibly, too much is aimed at. In referring to the same matter at the Fishmongers' Hall later in the week, Sir E. Brady spoke of the enormous loss sustained by the Irish fisheries in consequence of the high rates charged for carriage, while Sir A. Machonochie, for the Scotch fisheries, stated that a loss of 200,000*l.* a year was due to the same cause; so that we can quite understand why the representatives of this industry consider a radical reform essential. But here the question of cost of conveyance will come in, and the railway companies should be prepared to show whether they can or cannot afford to reduce their rates. It may be difficult to calculate how much the transport of the various classes of goods actually costs,—although, as has been pointed out, this is done by most foreign and colonial lines,—but the fish traffic is, we believe, specially classified and subject to special and elaborate regulations. This being so, we assume that the cost in this particular instance has already been ascertained, and can be readily furnished; and if the doctrine of "what the traffic will bear" has been consistently followed in determining the rates, they should be already as low as they can be profitably fixed. Otherwise, it follows that the railway companies are wilfully throwing away a large traffic in fish, there being great quantities destroyed because, at the existing figures, the charges for conveyance are prohibitive. There certainly seems to be a

good opportunity of proving the value of such statistics as those Sir Juland Danvers recommends us to agitate for, by calling upon the railway companies to furnish them in this case, in order to assist Parliament in considering the proposals contained in the Bill in question.

WE record in another column the death of Mr. John Pennethorne, to whose special studies in connexion with architecture Mr. Penrose referred in a letter to the *Times* of Wednesday. Mr. Penrose credits him with having been the first to observe or to suggest the existence of the curves of optical correction in Greek buildings. Mr. Pennethorne's work on the "Geometry and Optics of Ancient Architecture" is, as Mr. Penrose says, a remarkable one, and will always be worth possessing in an architectural library; but there can be no doubt, as we said at the time of its publication, that the author had allowed his ideas of the paramount importance of optical refinements with the ancients to carry him to some very extreme and improbable conclusions,—such, for instance, as that the Parthenon was only designed and intended to be seen as a perfect work from one spot on which the spectator was to stand: an idea which seems to be its own refutation. Students of architecture will find much of interesting and valuable suggestion in the book, but it must be taken *cum grano*.

IN the columns of *Nature* Mr. H. Marshall Ward is writing a series of articles on "Timber and some of its Diseases," which deserve the special attention of architects and builders. The subject is gone into very thoroughly and accompanied by illustrations. The last number deals with an old enemy, "Dry-rot." We quote the following important hint as to one means by which dry-rot infection may be unexpectedly communicated:—

"For the sake of illustration I will take an extreme case, though I have no doubt it has been realised at various times. Beams of thoroughly seasoned deal are cut with a saw which has previously been used for cutting up diseased timber, and a few spores of *Merulius* are rubbed off from the saw and left sticking to one end of the cut beam; this end is then laid on or in a brick wall or foundation, which has only stood long enough to partially dry. If there is no current of dry air established through this part, nothing is more probable than that the spores will germinate and the mycelium spread, and in the course of time,—it may be months afterwards,—a mysterious outbreak of dry-rot ensues. There can be no question that the ends of beams in new houses are peculiarly exposed to the attacks of dry-rot in this way."

SUCH consolation as fellowship in misfortune can afford may be derived by our 1,644 independent Sanitary Authorities from the melancholy state of their German neighbours in regard to urban sanitation. The *Gesundheits-Ingenieur* for 1887, cited in the abstracts of papers in foreign transactions and periodicals published by the Institution of Civil Engineers, as well as another journal, of which the title is too unpronounceable by English lips to allow of its reproduction, gives gloomy accounts of the failure of system after system. The Liernur process, Lindley's tank treatment, Dr. Petri's process, the dry-earth system, and that of Shone, are discussed in detail; and it is shown that each involves insuperable objections. In the irrigation process at Berlin it is shown that during six months of the year no vegetable growth takes place on the land, and that the sewage constituents are useless to vegetation. The effluent, "when the operations are duly conducted," is tolerably free from ammonia, but contains much lime, potash, phosphoric acid, and nitrogen compounds, and renders the water of the Teltower See, into which it falls, "more and more unfit for drinking, washing, and bathing purposes." Filtration has not proved satisfactory. "All precipitants fail to remove the nitrogen, and only arrest temporarily the process of putrefaction." The plans proposed for precipitation by mechanical means "have mostly fallen into disuse." Finally, and most unsatisfactorily, Dr. J. König, of Münster, in telling of all these failures, "deprecates unnecessary stringency as respects the degree of purity to be attained in the treatment of polluted liquids before their discharge into running waters."

THE energy of our cousins in the United States has, during the year 1887, added to their already large number of 137,986 miles of railway the length of 12,724 more miles; which is equal to more than the aggregate length of all the railways open in England and Wales in the year 1880. There are, however, railways and railways; and while the English lines at the date stated involved a capital cost of nearly 48,000*l.* a mile, the American lines had been constructed for rather less than a tenth of that price. Concurrently with this statement should be read a paper in the *Annales des Ponts et Chaussées*, abstracted for the Proceedings of the Institution of Civil Engineers, showing that the increase of new and unproductive lines of railway in France will, if allowed to go on, "before long bring up the guarantee and annuities paid by the State to more than the dividends of all the French Railway Companies; for whilst the receipts are reduced, every 1,000 kilomètres (620 miles) add an annual charge of about 800,000*l.* The sole efficient remedy," in the opinion of M. Ricour, the writer of the paper, "consists in stopping expenditure in the construction of unproductive lines, and in reducing the working expenses of the great systems of French railways."

THE German Archæological Institute at Athens is about to begin excavations near Thespiæ (about an hour and a half from Thebes) which promise to be of exceptional interest. Last December the inspector of Greek antiquities, Dr. Kabbadias, heard by accident that some small bronze cows, bearing the inscription ἱερὸν καβείρων, were being sold at Athens. He immediately scented spoil, and on inquiry learnt from the dealers that at Thebes, whence the cows had come, they had been found by workmen digging near Ampelosalesi. He and Dr. Dörpfeld went off at once to reconnoitre, and it was promptly decided that a thorough excavation of the site should be undertaken at the expense of the German Institute. It will not be forgotten that Pausanias (ix. 25, 5) gives an account of this very temple of the Cabeiri on which the lucky explorers have undoubtedly lighted. About 25 stadia from Thebes he came to a sacred grove of the Cabeirian Demeter and Persephone, which none but the initiated might enter; about ten stadia further on was the Temple of the Cabeiri themselves. Pausanias knew some good things about them, but in a most provoking fit of orthodoxy he declines to reveal them to the profane, and tells, instead, a long-winded story, evidently of late date, as to the origin of the worship at Thebes. The excavators might do well to remember that the Cabeiri are awkward deities to deal with when once fairly roused. The soldiers of Mardonius went on an exploring expedition to this very temple, in the hopes of "finding great wealth there"; what happened did not transpire, but they all to a man went mad, and threw themselves from the rocks into the sea. If the excavators would extend their operations somewhat they would come upon another temenos tenanted by a somewhat drastic deity, Herakles, worshipped under the title of "The Nose-clipper" (Ἡρακλῆς Ῥινοκολούστης).

SO thick and fast do discoveries follow each other at Athens that already it is necessary to begin a second Museum on the Acropolis. In it are to be stored all the smaller and generally the less important antiquities. The Government also is entertaining the idea of building behind the Central Museum a museum of casts. For purposes of comparison and analysis of style it would be serviceable, but we do hope that care will first be taken for the adequate housing of originals.

GAS-PIPES have their uses, even to the archæologist. During the laying of pipes near the silk factory at Athens, the workmen came upon five ancient graves of Roman date. They contained some gold ornaments and a good deal of glass. Digging down still deeper they found a grave of much earlier date, which contained a tripod with an object attached to it which is somewhat vaguely described in the Greek report as a "three-sided holder" (δοχεῖον τρί πλευρον). This is decorated with figures of a sphinx, a cock, and a horse. The same grave yielded 10 lekythoi, a mirror, and a quantity of fragments of vases.

THAT the French Government would refuse to authorise the issue of a lottery loan for the Panama Canal was the anticipation of those persons who knew that President Carnot is an engineer, and thus could not be ignorant of what such a step would involve. It is now announced by the *Journal des Débats* that the Ministers are unanimous as to the refusal. It is difficult to see what other reply could have been given to M. de Lesseps's letter of the 15th of November last. The *Scottish Review* for the present month, at the close of an exhaustive article on the engineering and financial features of the speculation, gives figures and authority for the statement that the item "Loans authorised and realised, 635 millions," cited in the letter of M. de Lesseps, actually amounted, according to the annual balance sheets of the company, to 1,347 millions of debt incurred. The aggregate share capital and loan debt of the company amounted in August last to 65,901,100*l.*, less a certain number of "obligations" paid off by the operation of the sinking fund. Less than a fourth of the estimated earthwork of the canal had been excavated by the end of last June, and the most important works, such as the dam at Gamboa and the tide lock at Panama, are untouched. On the 1st of January of the present year, M. de Lesseps stated that the company would have about 110 millions of francs in hand. The expenditure for 1885-6 was 154 millions of francs, that for 1884-5 having been 131 millions, so that under the most favourable conditions the present resources will be exhausted by the end of the coming summer. It is matter for curiosity to see how M. de Lesseps will propose to meet the difficulty.

THIS month's *Geological Magazine* contains, amongst other articles, an account by Mr. T. Mellard Reade, C.E., F.G.S., of the effects of alteration of temperature on terra-cotta copings set in cement, from which it appears that the copings become permanently lengthened, frequently entailing re-setting. In a case exemplified, he says: "The coping in question, which is freely exposed to the direct rays of the sun, consists of two courses of red Ruabon terra-cotta bricks set in cement upon a fence wall, built with common bricks in mortar, a brick and a half thick. The courses are level, but, in consequence of the inclination of the road, the coping is stepped down at intervals, so that the under-course of bricks of one length is just gripped and held in position by the top course of the next length of coping. It will thus be seen that it must constitute, by liability to lifting, a more delicate test than ordinary of any increase of length that might take place in the coping." When he examined this coping "the end portion of one length abutting against the next length at the drop in the level was thrown up into an anticlinal (arch-shape) of about 6 ft. span; the coping bricks being lifted, in the highest part, 1 in. from their bed. There was a fracture at the crown of the anticlinal, and another at the foot or springing, but for a distance of 30 ft. the coping was practically one solid continuous bar. A careful examination showed that the coping had 'grown' about a quarter of an inch longer than when it was first set, and that this lengthening, as shown by movement on the corbel bricks which occur at intervals, was evenly distributed along a length of 30 ft." From the fact that, if used too soon, cement expands for a certain length of time after setting, he was at first inclined to think that the lengthening was due to expansion of the cement, but, after experimenting with a bar composed of one of best Portland cement to one of fine sand, and on inquiry of the builder and bricklayer who on three or four occasions had reset the coping in consequence

of its lifting, he came to the conclusion that this was not the probable explanation. He showed that in another case, "where the coping is of blue Staffordshire bricks, the top course in cement and the under course in mortar, a change in length is shown clearly by the coping being lifted off the wall at each of the two ramps which exist in its length." Where the ends of such a coping butt up against a solid pier, this movement does not take place. He has observed several cases in which the end brickwork and piers have been badly fractured by the force of expansion. When one end is partially free to move, the minute expansions tend to push "the coping along towards the partially free end, and on contraction the coping cannot draw itself back to the same position as before, so must either fracture or lengthen by increments." We have on former occasions alluded to the scaling off of the surface of building stones from variations in daily temperature, and we now learn that even in this country terra cotta and brick copings are sometimes fractured or permanently lengthened from the same cause.

IT was stated in the newly-issued half-yearly report of the Metropolitan Railway Company that negotiations with the Electric Traction Company have resulted in an agreement for an experiment on a portion of the Metropolitan Railway by which the Traction Company will be able to test the working of their system. If the experiment proves an advantageous and economical method of working, the Traction Company are to work the railway for a term of five years. In the interest of the shareholders and the public, it is to be hoped that the experiment may prove satisfactory, for it is clear that sooner or later something must be done to put an end to the foul state of the atmosphere on the Metropolitan line. Should the experiment have a practical result, it may be that within a measurable time we may see some great revolution in the method of propelling locomotive engines on the railways of England.

WE commented a few weeks ago on an advertisement offering the munificent sum of 5*l.* 5s. for a design for a half-timbered front, to be carried out without the further intervention of the designer. It appears that 165 competitors sent in for this! What the designs were worth we cannot say; but it seems that advertisers of competitions on terms of this kind may reckon on getting quantity at all events, if not quality, for their money.

WE have received from Mr. C. E. Hallé and Mr. Comyns Carr a printed copy of correspondence between themselves, Sir Coutts Lindsay, and Mr. Burne Jones in regard to the Grosvenor Gallery disputes, which ultimately led to their withdrawal. The private correspondence is more temperate on both sides than the subsequent public correspondence. Messrs. Hallé and Carr gives figures to show that the Gallery was paying 10 per cent. on its outlay under their management,—not that they attach so much importance to the financial aspect of the matter, but to show that there was not the degree of financial failure which had been asserted; and the correspondence certainly does not imply any of the pecuniarily-interested motives on their part which have been suggested. It is now definitely stated that Mr. Carr and Mr. Hallé will open their own gallery next May. If this means merely that the spirit or soul of the Grosvenor Gallery exhibition will be transferred there, the matter makes little difference in an artistic point of view, except that we fear we shall not be likely to find another set of rooms so agreeable and so well lighted. If it means an entirely new May exhibition in every sense, we look on it rather doubtfully, being of opinion that for the best interests of art there are already too many exhibitions in London, affording opportunity for the display of a large proportion of works of only moderate interest, and leading to the dispersing and thinning out of the really good work over a larger number of exhibitions than it can fill without the addition of a great deal of inferior work.

THE HISTORY OF ARCHITECTURE.*

BY GEORGE AITCHISON, A.R.A.

IN his "Nicomachean Ethics" (book ii., cap. 2), Aristotle says:—"But our present inquiry has not, like the rest, a merely speculative aim; we are not inquiring merely in order to know what excellence or virtue is, but in order to become good; for otherwise it would profit us nothing. We must ask, therefore, about these acts, and see of what kind they are to be; for, as we said, it is they that determine our habits or character." So the important thing for us is not merely to know what architecture is, but how we may become good architects. It appears to me that this may best be done by studying architecture historically; for as history admits the observation of the writer, I propose studying architecture with you, not only historically, but critically as well.

Before entering on the subject of these lectures, which is Greek architecture, I think it will be well in the first instance to try and ascertain the methods employed or recommended in studying the other fine arts; for, as Cicero justly remarks, "all the arts which belong to humanity have something in common and a link like blood relationship between them." Next, what is genius; then, what is architecture, and the materials we have in our own art for producing æsthetic effects, and the effects we should desire to produce; and, lastly, the advantages likely to be gained by studying Greek architecture.

As regards the first inquiry, I have extracted some of the advice given by that great painter Sir Joshua Reynolds in his lectures, and I may add that every architectural student should read his lectures through; for, as he truly says, "He can never be a great artist who is grossly illiterate." I beg you to remark in the following extracts the stress he lays on the imitation of the old masters. If the greatest painter England has produced is so emphatic on this point, when the aim of his art is but to portray Nature in her most perfect form and colour, how much more does it behove the architect to study ancient master-pieces, as he can but learn lessons from nature, and can scarcely transfer anything directly from it into architecture. Sir Joshua says:—"By imitation I do not mean imitation in its largest sense, but simply the following of other masters, and the advantage to be drawn from the study of their works.

Those who have undertaken to write on our art, and have represented it as a kind of *inspiration*, as a *gift* bestowed on peculiar favourites at their birth, seem to ensure a much more favourable disposition from their readers, and have a much more captivating and liberal air, than he who attempts to examine coldly whether there are any means by which this art may be acquired; how the mind may be strengthened and expanded, and what guides will show the way to eminence.

It is very natural for those who are unacquainted with the *cause* of anything extraordinary to be astonished at the *effect*, and to consider it a kind of magic.

They who have never observed the gradation by which art is acquired,—who see only what is the full result of long labour, and the application of an infinite number, and infinite variety of acts,—are apt to conclude, from their entire inability to do the same at once, that it is not only inaccessible to themselves, but can be done by those only who have some gift of the nature of inspiration bestowed upon them.

The travellers into the East tell us that when the ignorant inhabitants of those countries are asked concerning the ruins of stately edifices . . . . the melancholy monuments of their former grandeur and long-lost science, they always answer that they were built by magicians. The untaught mind finds a vast gulf between its own powers and those works of complicated art which it is utterly unable to fathom; and it supposes that such a void can be passed only by supernatural powers."

Again:—"We cannot suppose that any one can really mean to exclude all imitation of others. A position so wild would scarce deserve a serious answer; for it is apparent, if we were forbid to make use of the advantages which our predecessors afford us, the art would be always to begin, and consequently remain always in its infant state; and it is a common observation that no art was ever invented and carried to perfection at the same time. . . . Genius,—at least, what is generally so called,—is the child of imitation. . . . . Invention is one of the great marks of genius; but if we consult experience, we shall find that it is by being conversant with the inventions of others that we learn to invent."

Madame de Staël emphasises this statement. She says of Petrarch, "He put to the proof that knowledge greatly helps us to invent."

Sir Joshua continues:—"The mind is but a barren soil, which is soon exhausted, and will produce no crop, or only one, unless it be continually fertilised and enriched with foreign matter. . . . . The greatest natural genius cannot subsist on its own stock: he who resolves never to ransack any mind but his own will be soon reduced from mere barrenness to the poorest of all imitations,—he will be obliged to imitate himself. . . . . There can be no doubt but that he who has the most materials has the greatest means of invention. . . . . All the inventions and thoughts of the ancients, whether conveyed to us in statues, bas-reliefs, intaglios, cameos, or coins, are to be sought after and carefully studied; the genius that hovers over these venerable relics may be called the Father of Modern Art. He who borrows an idea from an ancient, or even from a modern artist, not his contemporary, and so accommodates it to his own work that it makes a part of it, with no seam or joining appearing, can hardly be charged with plagiarism. . . . . Poets practise this kind of borrowing without reserve."

As regards this remark, I may say that Horace took from Tyrtæus the aphorism that "it is a sweet and becoming thing to die for one's country," and the writer of the "Mourir pour la Patrie" repeats it. Keats's line, "A thing of beauty is a joy for ever," is from Euripides, but as antiquity may be looked on as common property, I may mention a few other instances that occur to me of the borrowing from modern writers. Gray's line, "The curfew tolls the knell of parting day," is from Dante; and Coleridge's line, "Oh, call her rather fair than pale," is from Tasso; in short, all the progressive arts,—and Pascal says architecture is one of them,—progress by the improvement of what has gone before. Nothing shows us so completely the small accretions that each generation makes as a gallery of painting arranged chronologically from its first deliverance from Byzantine fetters. Though we must recollect that the sudden affluence of statues, bas-reliefs, coins, and engraved gems, partly caused by a keener search and partly by the impending fate of Constantinople, made the Renaissance stride over a greater gap. That gap was the knowledge that perfection was to be attained by correcting individual beauty by the study of human nature as a whole.

If we are deeply versed in literature we find each age mainly reproducing the literature of the preceding age, corrected and embellished.

That marvellous collection of stories, "The Arabian Nights," is but a collection of old-world stories dressed in Muslim attire, and embellished by the skill of the ages it had passed through, up to the time in which it was published. Horace tells us that if a poet wants to perfect his style he must study the Greek masterpieces by day and by night. In many respects Virgil has embellished Homer, and doubtless Homer embellished the works of his predecessors, and Dante tells us that Virgil was his "guide, philosopher, and friend," to whom he owed his style. Even had we been without these express statements,—even could we not see the direct benefits that each poet has received from his predecessors,—we could not doubt that every poet had studied all the masterpieces he could get, before adventuring on his own. If, as the ancients say, lightning could come out of a clear sky, we might expect to find the highest efforts of man's genius, the stately edifice, the impassioned poem, the elaborate opera or oratorio, the grand picture, or the noble statue produced by the naked savages of Central Africa. Art, literature, science, and civilisation itself, are like the coral islands: each tiny insect adds its mite to the work, which at last defies the attacks of ocean in its utmost fury.

Not to weary you by "damnable iteration," I will conclude this part of my subject with some extracts from the late Sir George Macfarren, who has unhappily been taken from us.

In his last address to the Royal Academy of

* A lecture delivered to the students of the Royal Academy on Monday evening last, by the Professor of Architecture.

Music he gave the following advice to its students:—

"Those who compose must make mental exercises. It is not casually to write or sing, or play on an instrument, but to have the constant habit of constructing musical phrases, of planning musical arrangements, of exercising the faculty of invention, and the faculty of design. . . . . It is not ever in the career of the artist that he could say, 'I have finished.' . . . . It is the constant seeking of advancement, which is the real means of developing the faculties wherewith Nature has endowed us all. . . . . In order to master their art fully, and to do justice to the productions of present times, they must have a knowledge of the works of preceding periods; . . . . let them work at the productions of musicians of former times, and let them hear with interest the productions of their own. . . . . Let them have the conviction that originality could only find its proper expression when they had commanded by constant exercise such power over their faculties as would enable them to give utterance to that which was individual in themselves."

I will now take the second head, and we will try to see,—what is genius?

Genius has been defined as the gift of taking an infinite amount of trouble, and, though I cannot agree with the definition, I think no genius will be found without this accompaniment.

Genius must naturally be a gift of which the owner is unconscious. He can only become gradually aware of its possession by comparing himself with his contemporaries, and his works with theirs, and with those of his predecessors. As there is no merit in the possession of Nature's gifts, it is to the interest of those possessed of genius to deny its existence, to attribute their excellence solely to their own perseverance, determination, and industry.

I think we may content ourselves with one of the definitions of genius in the Dictionary:—"Uncommon powers of intellect, particularly the power of invention." Still, we know so little of the human mind, that we can never boldly assert that what is called genius is unattainable by that constant perseverance, in season and out of season, that accompanies the intense love of any occupation.

We know that our mental faculties can be improved and strengthened in the same way as those of our body, and as the greatest genius can never assert that he has done all he might, neither can the dullest ever say what he might have done had he used his mind properly to find out what he should do, and had then done it; besides, if a man have never so great a treasure in his garden he will not find it unless he dig, and it more often happens than not that Æsop's fable is true, that the persistent digging of his garden may turn out to be more advantageous to him than the treasure; certainly all the men of genius I have known, or read of, have been assiduous and persistent workers, and ardent and enthusiastic students of the masterpieces of their predecessors.

We know not what are the factors that make the individual genius, but we do know something of the factors which make a fine people from whom geniuses spring.

Pure air, pure water, sound food and drink, cleanliness, the full and proper exercise of all our bodily and mental powers, and of those intellectual and moral qualities that formed the Greek creed, *wisdom*, *courage*, *temperance*, and *justice*; in short, living as near as mortals can within the laws of nature, when this is accompanied with great competition and emulation.

Astronomers tell us that a new planet is looked for when there is much unexplained perturbation in some of the planets. We have but to reverse this process when we meet with a genius, for we may be sure that he emerged from a throng of those earnestly engaged in similar pursuits. Shakspeare was once supposed to be a single bright particular star, but it was discovered that he was only the most brilliant amongst a galaxy, and more lately Dante was found to have had a similar surrounding.

When we sink into greedy, drunken, foolish, unjust, and cowardly slaves, farewell to liberty and the fine arts.

The third head is "Architecture," and we will see what Mr. Freeman says:—"Architecture then, in its widest sense, as the building art, differs from other arts in being not merely essential to man for the full scope of his highest faculties, but required for his physical comfort, almost for his very existence. And surely it is a wonderful application of the principle above alluded to that from such an origin should arise the very first of arts, that which has produced the most thrilling and awful works of human genius; which at once requires the least technical knowledge for its general appreciation and opens the widest field for minute inquiries and philosophical speculation. The art whose name bespeaks it the chief and queen of all, which presses the noblest of other arts into its service and bends them to its will, is thus at once their beginning and their end; the most lowly in its origin, the most glorious in its perfection; slowly and gradually has it risen, enriched by the contributions of every age, and creed, and nation, from the log hut of the savage, we might say from the lair of the wild beast, to the fairest works of mere human and heathen beauty."

Macaulay said "Architecture was more of a science than an art." Be that as it may, we can now-a-days see a good deal of science displayed in various erections that even their authors would not venture to put under the category of art.

Here we have to divide the soul from the spirit, and wed ourselves to art alone. Mr. Freeman, again, says, "Architecture, then, is itself, like all fine art, the creation of the higher part of man's nature, and subject to the influence of the intellectual and moral workings of individuals, ages, and nations; there must, therefore, be a science of architecture as a branch of the general science of the human mind." What are our materials for æsthetic work? Outline, light and shade, proportion, and composition, and to these means we may add, what no building should be without, painting and sculpture.

Architecture as a rule is bounded by conditions and necessities; each building must more or less fulfil the conditions for which it was built, and for its production it requires certain materials, that also have conditions under which alone they can be used.

Outline is, perhaps, more dependent on the taste of the people than anything else. The Greek outline was that of the hut. But we know not what was the Roman outline before the capital of the empire was at Byzantium.

That which now strikes us most at Rome is the long stretch of aqueducts, for externally the dome was either hidden by a pyramidal roof or a small part only emerged from steps. It is not impossible that when the Roman Empire was overrun by the savages the most striking feature was the watch-tower, and this they seized on.

From Byzantium came the outside feature of the dome, undoubtedly imitated by the savages of east and west when they overran the empire. The Lombards adopted the dome and the bell-tower, the Saracens the dome and the minaret, and these two features became the leading external ones of the Romanesque. In Mediæval times the lantern and the spire were glorified. Since then the dome again asserted its predominance, until mankind, absorbed in physical science, no longer sought to embody their aspirations in architecture. When new and noble aspirations again lift men from their present sole desire of filling their bellies and their pockets, a new iron architecture with a new outline may soar above the metallic architecture of Homer's days.

Again, the question of voids and solids is governed by actual wants, the exigencies of climate, and the capabilities of the materials, so that we have little in our hands but the proportioning of the whole, and of the voids and solids, the shaping of jambs, lintels, columns, and piers, and the use of mouldings; and Viollet le Duc says "mouldings are architecture." Out of these scanty materials, surrounded as they are by all sorts of limitations, we have to construct our poem or oratorio in marble, stone, brick, or iron. Those architects were fortunate who lived in times when they had to satisfy a definite desire, and had beholders who were sufficiently clear as to the effects they wanted, and sufficiently cultivated to know when their desires had been fairly or well fulfilled, or when the effects produced surpassed the bounds of their imagination.

In the present day there is no definite desire; people hardly know whether they prefer a building to soar in the air or to grovel on the ground: whether they would sooner have simplicity or complexity, plainness or richness; and so little knowledge or imagination do they bring to the consideration of the completed work, that if it rises above the execrable the most perfect work scarcely causes an emotion or a remark.

Fine music would probably cease to be produced if all but the musicians were deaf; fine architecture must certainly cease if all but the architects are blind; but we hope that this insensibility to the beauties of architecture, to the distinction and even the wealth it confers on a nation, may soon cease, for as Aristotle says, "Architecture is one of the master arts."

Madame de Staël truly says, "Painting and sculpture, mostly imitating the human figure or some object existing in nature, awake in our soul perfectly clear and positive ideas; a fine architectural monument has not, so to speak, any determinate sense, but in contemplating it one is seized by that reverie without calculation and without aim which leads our thoughts so far."

Still architecture, in so far as it is a fine art, has to produce certain effects in the beholder, and one of its first effects should be to declare the purpose of the building, and to arouse those thoughts and those emotions that are appropriate to its purpose. A fortress should suggest strength and protection, and once did so, but it has now passed away from the domain of architecture, and suggests gravel pits, a mole-hill, or a rabbit-warren; a prison should suggest terror or dismay; a palace, dignity; a mansion, elegance and taste; a court of justice, awe; a cathedral, sublimity; but besides this every building should suggest permanence, stability, and repose, and exhibit the stamp of architectural art.

Having now concluded the preliminary inquiries, I shall enter on the main subject of the lectures.

I have begun with Greek architecture, though it is not supposed to be the oldest, and some believe it has no more sprung from Greece than the Greeks themselves, but because it is that which has mainly influenced the course of architecture in all the countries of Europe, the greater part of Asia, the north of Africa, and the modern architecture of the new world, because it has been and still is considered by competent judges as the most perfect, as far as form goes, that the world has yet seen, and amongst other considerations because we find in Greece itself some of the earliest forms of construction in stone, which rather incline us to believe that Greek architecture was created and perfected by the Greeks themselves.

The older any admired work is the greater is its claim to respect and study. In every age something perishes, taste and fashion are perpetually changing, so that even admirable things have often to make way for those more in fashion; but when old things have come down to us through long periods of time, and particularly when they have survived through being cherished as choice productions, we may be sure that they appeal to the general and permanent sentiments of mankind, and are not tinctured with the evanescent whims and caprices of fashion.

If we would build so that the beauty of our works will cause them to be preserved for ages, we must discover what were the principles followed by the ancient Greeks, and adopt them.

The Greeks were the most brilliant people the world has yet seen: they alone appear to have discovered those principles of beauty in *all* the fine arts that appeal to the sentiments of mankind generally. They may almost be called the inventors of literature, for Homer's poem is believed to be the oldest we have, that can lay any claim to literary eminence. The ancient Greeks are still unsurpassed in poetry, in eloquence, in rhetoric, in philosophy, in sculpture, in statuary, in architecture, and in the subsidiary arts, and we might find that they were also unsurpassed in painting, had not all their pictures perished.

As regards sculpture and painting,—for Michelangelo said "sculpture was the lantern of painting,"—the Greeks were the first people who made sculpture and painting proper possible, for every free citizen had to train naked; Plato tells us they weighed the advantages and disadvantages of clothes, and decided against them, remarking truly that nothing was ridiculous but vice and folly.

If you ask a learned poet who was the greatest poet who ever lived, he tells you

Homer; if you ask a song-writer, he probably says Tyrtæus,—at any rate, Tyrtæus furnished Horace and the author of the "Mourir pour la Patrie" with their aphorism, as I said before; a dramatist says Æschylus, Sophocles, Euripides, and Aristophanes; an orator, Demosthenes; a moral or mental philosopher, Zeno, Epicurus, Plato, and Aristotle; a sculptor or statuary, Phidias, Polycletus, and Praxiteles; an historian, Herodotus and Thucydides; most architects, Ictinus, Callicrates, Mnesicles, and Dinocrates; and we still begin our geometry with Euclid.

The Greeks, therefore, must have found out the secret, not only of affecting their own cultivated people, but the generality of mankind as well, and it is no small commendation to them that this was a master secret, like the law of gravity, for their works have won the admiration of mankind ever since.

It is our business, therefore, to try and rediscover their secret for our own art. Even if we believe the Greeks to have been a nation of geniuses, and that we are not, this should not deter us from analysing their works, nor from trying to find out their secret, and when we have found it from applying their principles to our own works.

Quinctilian thus speaks of the Attic Greeks,—"The keen and polished inhabitants of Attica did nothing that was useless or redundant," and I think we may say that, in all the fine arts, they were actuated by the same motive as the Jew of Malta, who proposed to exchange all his vast wealth for a diamond, so as to have "infinite riches in a little space."

Nothing could suggest to us a more commonplace effect, if it were merely spoken of, than a hut surrounded by an open verandah; yet this is the type of Greek buildings. This commonplace form it is that has won the applause of all the cultivated amongst mankind.

It was not, either, by overwhelming size that it produced its effects; for from what Pliny tells us, that sixth wonder of the world, the Temple of Diana at Ephesus, could have been little more than 100 ft. in height, from the paving of the portico to the top of the pediment, and the Parthenon was but about 60 ft. What, then, was the cause of this admiration? The exquisiteness, subtlety, and simplicity of its beauty.

First, there was the choice of those forms in the parts that are at once the simplest, and yet give the greatest contrast; then there was a refinement of form that almost reached absolute perfection; then the most perfect proportioning of each part to all the other parts, and of the whole feature to the whole building; and that proportion and that perfection were not arrived at at once, but were produced by a gradual improvement, not confined to the life of one man, but to generations.

That acute critic and learned historian of architecture, James Fergusson, in his book on the "Principles of Beauty in Art," asserts, and asserts with truth, that every art progresses by successive improvements, and insists that the only way to perfection in any art or science is to gradually improve on some type; he takes a church as his example, and supposes one built according to the best instructions that could be given, that the next shall be like the former, only avoiding the defects discovered by use, and so on; and he finishes by saying:—"By the time we have built the genius and experience, not of one or two men but of a hundred or a thousand, into the walls of our church, we shall have something that no one man has done or can do." But he omitted saying that Greek architecture had exactly carried out this method.

The Greeks had not only exquisite sensibility and took endless trouble, but their very condition of mind was different from the Roman. The Roman said, "I have done this work"; the Greek said, "I was inspired to do it." Next, as to the pains taken, when the architect had designed a moulding, or a group of mouldings, and you see, from those before you, how every little refinement or subtlety was employed to get or enhance the effect wanted, he set out each moulding he had drawn, mathematically by conic sections.

I once said before, when speaking of the refinement of Greek mouldings, you can conceive the inspired architect who hoped to have a public building or temple to do, watching the echinus of a Doric temple he wanted to surpass from sunrise to sunset, and, pondering how he could improve on the subtlety of the curve; every device by which an extra beauty could be added or a defect cured was resorted to, and probably both the beauty and the defect were only visible to Greek eyes; minute differences were made in the spacing of the columns, differences in the vertical angles of the columns with the floor, the enlargement of angle columns, and all those delicate curves were adopted to correct optical illusions which Mr. Penrose has rediscovered for our use and admiration. However much we may delight in the simple and majestic Doric, we must be insensible to beauty if we do not see in the Ionic capital one of the loveliest forms it has been man's prerogative to invent. The Corinthian, too, has been so appreciated by mankind that it was even paraphrased in Romanesque and Mediæval times.

Again, architects, sculptors, and painters vied with each other to see how these sister arts could mutually enhance each other's value.

So far for the art,—now for the execution. The Greeks chose the most perfect of all materials for their best work, the finest white marble, which admitted of the finest workmanship, though the marble was covered with stucco when it was painted. No contract work was admitted on their public buildings, so that unhampered by the knowledge that the more pains he took the worse he would be paid, every man might do his best.

One of the explorers of the Acropolis, he who found the gateway in the wall opposite the Propylæa, M. Beulé, says it was all put together like a piece of cabinet work.

I cannot too strongly impress on your minds the value that ungrudging labour adds to any work.

In the opinion of competent sculptors, the athlete vulgarly called "the fighting gladiator" occupied the whole of the sculptor's life. Pascal's letters are still read for the perfection of their style, and he tells us some were rewritten sixteen times, so that every superfluity might be excised; and he apologises for the length of one by saying he had not time to make it shorter.

I am not much of a novel reader, but when I heard that "John Inglesant" had taken fifteen years to write, I bought it at once, and read it, knowing that a work that had cost so much labour must be worth reading.

You all know Sheridan's remark about easy writing; so if you want your work to last for ages, the expression, "Oh, this will do!" should never part from your lips, or be harboured in your mind; and if you think you can improve your work, you should let no other consideration stand in your way.

Architecture can never be much improved until the type has been hit on, and the genius, thought, and skill of the whole body of architects brought to bear on its improvement. You all know that the work of the Tower of Babel was stopped by the confusion of tongues.

If I have convinced you that Greek architecture is the most perfect the world has seen, I think you will admit that it is pre-eminently worthy of study.

But lest you should fancy that in thus describing Greece and Greek architecture I have merely expressed my own personal likings, I give you the following extract from the eloquent pen of Mr. Freeman, that doughty champion of Gothic architecture:—

"For grace, simplicity, and loveliness, we have still to look to that wonderful people, who, after the revolutions of so many ages, yet remain the centre of all intellectual greatness, whose history still furnishes the best lessons in the science of man's political and social being; whose literature must remain to every age as the groundwork of every intellectual study; from whose poets we derive our first ideas alike of all that is lovely, and all that is sublime; from whose philosophers we learn the first principles of the first of sciences, the laws of thought, and of the passions which stir the human breast. Such was the glorious land of Greece, the land where the poet,—yes, after all the cavils of philosophical inquiry, the real blind minstrel that we dreamed of in our childhood, the living personal Homer,—breathed forth those songs to which six-and-twenty centuries have not produced a rival; where Pericles ruled supreme in the first of her cities, not by the spears of mercenaries, but by the magic influence of mind; where Aristotle first looked into the heart of man and learnt to analyse its deep and mighty workings; and whence his royal scholar, the best and greatest of universal victors, went forth on the errand of conquest, not to plunder and destroy, but to spread the arts, and language, and manners of immortal Greece to the utmost limits of the civilised earth. The three centuries of Grecian greatness, the single century of its meridian splendour, have had more effect upon the subsequent destiny of the world than all the countless dynasties of Egypt and the East. The latter have fallen, and have left their names alone behind them. Greece is no less fallen, but her possessions have become the inheritance of the world throughout all time. And this is especially true of her admirable architecture; as it was in Greece that the art first attained perfection, it was in Greece, too, that it first acquired a character worthy to be transmitted to other lands.

The styles which we have hitherto considered are, on the whole, isolated; they have but little connexion with each other, and have had still less influence upon the architecture of more recent times. As our civilisation and literature is in no degree borrowed from China, India, or Egypt, so neither is any form of architecture which has ever prevailed in Europe; but as Greek influence has in other respects pervaded the intellect of every European nation, so in architecture it has been especially pervading; every succeeding form of the art is to be traced up to the Grecian model as its primary source. Its character, indeed, has been totally changed: new ideas and principles,—constructive, æsthetical, and religious,—have been continually introduced, till all trace of the original pattern has vanished from the most essential features. Still all has been gradual and gentle development and improvement; dissimilar as are the colonnades and horizontal entablatures of the Parthenon to the clustered shafts and soaring arches of Westminster. The steps between them may be distinctly traced; the resemblance becomes gradually fainter, but is not effaced by any sudden or violent shock."

NEWSTEAD ABBEY AND HUCKNALL TORKARD CHURCH.

Hall of my Sires! a long farewell—
Yet why to thee adieu?
Thy vaults will echo back my knell,
Thy towers my tomb will view.
"The Adieu."—BYRON.

ON January 13, 1803, Mr. John Hanson, of 6, Chancery-lane, solicitor, sends to a Miss Launder and Lord Grantley a paper entitled "Proposals for letting Newstead Abbey, 13th January, 1803." Lord Grantley (William, the second baron) did not become a tenant, but Miss Launder and her sister occupied the Abbey for a few months in that same year, after which period it was let to Henry Yelverton, nineteenth Baron Grey de Ruthyn. At that date Lord Byron, the heir, was just fifteen years of age, having succeeded (1798) to an ancient barony so impoverished that the rental barely sufficed to defray his school bills at Harrow. The Court of Chancery had made an order for the letting of the Abbey during his minority for such a rental as, subject to certain reservations, should yield 50*l*. a year after providing for repairs and the gamekeeper's wages, and for payment of the rates. Lord Byron celebrated his coming of age at Newstead, and there he wrote his "English Bards and Scotch Reviewers" (1809),—the small round table and inkstand he used are still preserved there,—having succeeded to a sum less than 1,000*l*. on attaining his majority. From Batt's Hotel, Jermyn-street, under date April 26, 1809, he writes to his friend Hanson for 3,000*l*. in view of his projected tour in the East; and, whilst willing to sell Rochdale, says:—"Come what may, in every shape and in any shape, I can meet ruin, but I will never sell Newstead; the Abbey and I shall stand or fall together, and were my head as grey and defenceless as the arch of the Priory I would abide by this resolution." But sell it he eventually did, in 1818, to his old schoolfellow Wildman, who thus became owner of a fine ruin to which the poet reverts in some of his better known poems. Colonel Wildman's restorations and additions were enthusiastically carried on by his successor, Mr. W. F. Webb, the celebrated explorer in Africa, who subsequently bought the property of Wildman's trustees. In April, 1816, Lord Byron quitted England, to return no more.

Newstead Abbey constitutes a liberty, some

3,326 acres in extent, within the Broxtow wapentake, upon the south-western confines of Sherwood Forest, and lying against the high road from Nottingham to Mansfield. Solicitous to render expiation for ÂBeckett's martyrdom, King Henry II. founded a priory here, in 1170, for black canons regular. It was dedicated to St. Mary the Virgin. At the Dissolution, the priory, together with its closes, &c., the manor of Papilwick, and rectory of the same, was given over by Henry VIII. The grant is dated 28th of May, 1540, to Sir John Byron, knight, Lieutenant of Sherwood Forest, representative of the Norman branch of the Scandinavian Bürüns, and of whose Livonian branch the most famous was the Marshal de Buren. At the time of the Domesday Survey Ralph de Buron was seised of various lands and manors in the counties of Derby and Nottingham. His lineal descendant, William, fifth baron Byron of Rochdale, in the county Palatine of Lancaster, played sad havoc with the timber in the park, a relic of the old forest, and by other means left but a poor inheritance to his grand-nephew and successor, George Gordon, the poet. The Byrons once lived at Bulwell Wood Hall, in Hucknall Torkard parish, which was rebuilt by the Hon. William Byron, *temp.* Charles I. Of the old buildings at Newstead the best portions are the beautiful western front, in the late Early English mode; the cloisters, refectory, chapter-house, and the zenodochium, or guest-chamber, now serving as the servants' hall. The chapel is a modern restoration, and the stables, already ivy-grown, were built by Mr. Webb. The abbot's apartments are shown as the poet's bedroom and dressing-room, with the haunted chamber adjoining; and in the condition as occupied by him. These look out upon the cascade and lake associated with recollections of "Boatswain," the dog. The abbot's parlour, now used for a breakfast-room, was Byron's dinner-room. Some apartments are shown here as being those that have been occupied by Edward III., Henry VIII., and Charles II. Here, too, are jealously preserved certain articles personally connected with the poet's memory, such as his portraits of Jackson, the boxer, and Murray; some books, portions of the military uniform he wore in Greece, "Boatswain's" collar,—and so on.

Near to Annesley Park, home of Mary Chaworth, and two miles south of Newstead, and on the River Leen, is the parish of Hucknall Torkard. This name is derived from the De Torkards, formerly lords of the manor, whose mansion stood close by the parish church. The church, dedicated to St. James, consists of chancel, nave, aisles, and a four-pinnacled western tower. The tower is Norman in its lower stage and Decorated above. The northern aisle is Perpendicular. The chancel and nave are Decorated; the southern aisle is modern. The silver-gilt paten and covered chalice were a gift by Lady Elizabeth Byron, 1562. The register dates from 1558, and the living, a vicarage, is in the Duke of Portland's gift. The fabric was restored some sixteen years ago, at a cost of 3,000*l*. Last November were laid the memorial stones of new transepts and a new chancel, —the latter to be lengthened 20 ft. eastwards, after the designs of Mr. R. C. Clarke, of Nottingham, architect. This scheme includes also the raising of the nave clearstory. The contractors are Messrs. Fish & Son, of Nottingham, whose tender for the work amounted to 3,734*l*. Two ladies, well known in this district, have contributed largely to the restoration fund. No interference, we hear, will be made with the Byron vault, underneath the chancel, wherein the poet lies, as also his daughter, Augustus Ada, Countess of Lovelace, his mother, Catherine Gordon, and several of his ancestors. The vault is no longer open to visitors. On one occasion, it is said, a shred of velvet from off of Byron's coffin was eagerly secured by Kossuth. A tablet in the floor above will be replaced so as again to denote the position of his remains in the vault. This is a piece of rare Rosso Antiquio marble, presented, *ad hoc*, by the king of the Hellenes. The laurel wreath, in brass, let into the stone is the work of Mr. R. C. Belt. In the chancel south wall is, or was, the mural tablet set up by the Honourable Augusta Mary Leigh, daughter of Captain John Byron by his first wife, in memory of her brother (1824). Here, too, is a monument to the redoubtable seven sons of Sir John Byron, who rendered such signal service to their king at Edge Hill, and defeated Hazelrigg's dragoons, under Sir William Waller, at the victory of Roundaway Down, July 5, 1643. The Abbey sustained a hard siege in the Civil War, *temp.* Charles I.; and it was when charging in the ranks of Lord Byron's cavalry, at Newbury, that "godlike Falkland fell." Two or three months later the eldest of them, Sir John, M.P. for the shire, was elevated baron of the realm, as Lord Byron, with a limitation, in default of his own male issue, to his brothers in tail.

THE USE AND ABUSE OF MATERIALS.*

BEFORE the sermon comes the text, but in the present instance I do not propose to make the text so much a peg whereon to hang my sermon, as a species of apology for what some may consider my presumption in raising questions as to what our immediate predecessors, and we ourselves, have done and are doing with materials.

This, then, is my text, in the words of Dr. Arnold ("Lectures on Modern History," published 1841):—

> "Two things we ought to learn from history,—one, that we are not ourselves superior to our fathers; another, that we are shamefully and monstrously inferior to them if we do not advance beyond them."

Now, I am sure you will agree with me that in studying the history of architecture, we must admit the truth of the first clause of the foregoing remark. For the second, if we diligently study what our forefathers (dead and alive) have done, and profit by their experience, their successes and their mistakes, we ought to go beyond them. If we fall into blind imitation, we can do nothing but go back. Let not any one suppose, therefore, that I have come to-night in any spirit of fault-finding.

I hope that in the course of what I have to say I may not be accused of being too discursive. In case any should presently be disposed to accuse me of this evil deed, I will at once disarm him by stating now that I shall give myself permission, and ask yours, to be very discursive, and take little journeys right and left of my main course. You will see, at once, how large a field my subject may cover; and that without any effort at "spinning-out."

To begin, therefore, with my subject. Those who note the critical remarks made in journals, professional and non-professional, and the expressions of opinion either by the layman, the artist, or the craftsman, upon those matters with which we are professionally concerned, must, if they think the thing over, be struck by the apparent want of basis or foundation upon which the remarks rest. By this I mean that the opinions expressed upon one subject in two professional papers will often be very opposite. One will commend what the other will disapprove. It is, of course, much the same in conversation.

It is a blessed circumstance that the man of artistic temperament is usually one who not only has a stock of ideas to put upon paper and carry into execution when an appreciative public finds him out, but he is also blessed with abundance of words, and can give a hundred reasons why this or that should be thus or thus. He convinces himself, for which we should be thankful. But his reasons, so clearly and pleasantly set forth, do not carry the faintest conviction to the mind of his companion,—also of artistic temperament. When the conflict of words takes place between A and B, B is terribly obstinate. A feels that the subtle flow of ideas passing through his mind whilst preparing his design, and which he is defending to B, has not impressed the mind of the said B. B cannot see it. A is rather sorry for B; however, he believes that further experience will doubtless enable B to see more deeply than he now does. So A is consoled, and B thinks (in his heart) that A is rather fantastical.

Now, why is it that A and B have not taken the same view of things? If the subject under consideration is one of abstract taste only, we can understand why a difference of opinion should exist, for tastes differ and always will differ. The terrible thought dawns upon me that very possibly I, too, shall beat the wind, and not convince anybody whilst setting forth my reasons for the faith that is in me. I shall be very sorry, but you will have to put up with me for this evening.

We have not this evening to deal with the painter of pictures, whose works, as compared with ours, may be criticised upon principles of abstract taste. Within the four corners of his picture-frame, if he be an easel painter, he is master so far as his powers will take him, and if we don't understand his work or sympathise with it we can pass on. On the contrary, we have to deal with the architect, the designer in solids, the man who has to know that the work he designs will, when carried out, stand up and hang together; that it will fulfil the conditious for which it is required. And here I would wish to state that the sort of person who shall be called an architect (it is a very good word for the purpose) is not to confine his attention to bricks and stones, or iron and concrete, but wood; gold, silver, and other metals; silks and other soft materials, glass, marbles, and other things too numerous to mention now, — all must come under his attention, and he must know the restrictions and limits which the varying natures of all these materials impose upon him; and he must always work within those restrictions and limits.

Now, if you agree with me in this statement, it seems to me that we have some common ground on which to base our criticisms, and I go so far as to affirm that if in his design the architect loyally complies with the conditions I have laid down, his design cannot be thoroughly bad, although it may be utterly commonplace, and may violate the grammatical rules of style. On the other hand, no correctness of style or artistic fancy and invention in certain parts of the design will redeem any work from being more or less base, which violates laws of construction or the true use and capability of materials, or which sacrifices convenience (if the thing produced is intended for use).

Some may not agree with me. It is, indeed, evident, by an examination of much modern work, that many do not or, at any rate, they do not trouble their heads on the subject. So long as a thing looks pretty, or is correct in its details, no deeper considerations are entertained. I must not detain you longer with generalising, but will proceed to take a shot at the enemy.

A somewhat dangerous thing is throwing stones, even if you are a good shot, which I am not; and if I am so bold as to make some promiscuous shies, I must, of course, stand to be shied at in return. However, I will be encouraged by the example of little David, and will take a stone out of the bag, for I see several Goliaths in my mind's eye.

Now, in searching about for stones, I have found that those selected from Mediæval strata are usually the best, whilst the Goliaths, some of them very grim and of huge proportions, have chiefly arisen in more modern times, from the full growth of the Renaissance even to this very day.

However much some may disagree with what I have said, and differ from what I shall hereafter venture to say, I suppose that every one here will agree with me in admiring the wonderful directness of aim as displayed in Mediæval art. This is more apparent in the use of some materials than in the use of others, but if we carefully study the works of our forefathers, whether they be the plans of their buildings, their methods of construction, their decoration, their use of metals, glass, woven fabrics, &c., we find all these things, as a rule, used subject to the restrictions and limits imposed upon the designer, either by the varying nature of the materials used, or by the conditions under which the designers worked.

The first stone I should like to take out of the bag would be one on which I find the label "Plans." A building badly planned is, of course, a great abuse of materials, but I do not think I ought to venture on this subject to-night: it hardly comes within my province, and I should probably abuse your patience.

So we must look for another stone, and I perceive one which may, I hope, sink deeply into the forehead of a most great and fashionable giant, one of recent birth, but who has grown at a great pace, and whose end will certainly be rottenness at no distant date. I mean half-timber construction, so called.

What was old half-timber construction, and why was it used? I need not trouble you with saying much on this matter. Our country was full of fine timber; it was easier to use than stone, being in most cases close at hand. In stone districts we find but little half-timber,

* A paper by Mr. Somers Clarke, F.S.A., read before the Architectural Association on the 20th inst., as elsewhere mentioned.

but in the very extensive districts where stone must be imported we find half-timber to have been in general use. These half-timber buildings were always, so far as I am aware, what they appeared to be. They consisted of a frame of timber with panels between filled in in various ways, according to local custom, which was generally ruled by the materials at command.

An examination of one of these buildings, even of a stately residence, shows that although certain posts, beams, and sills, may be of great scantling, the walls generally were very thin. The timber shrank away from the panels, even when the timbers were grooved and the panels double. A more windy and uncomfortable method of construction to the dweller within, or one more picturesque and charming to behold from without, can hardly be imagined. In the oldest specimens of half-timber work I have seen, the frame shows inside and out. The rich man had doubtless his arras on the walls. The poorer folk shivered. The upright timbers stood upon horizontal sill-pieces. The rain trickled between the uprights and the panels, settled into the mortise holes, and rotted the sill-pieces, and frequently the uprights. Not long since I had to replace oak sill-pieces, 16 in. or 18 in. square, that had gone into powder from this cause. The first step in the path of comfort was to panel the inside of the wall, or to lath and plaster it. The next step towards increased comfort we can still see in our towns. The timber-fronted houses, of which hundreds still remain, were covered with lath and plaster outside as well as in, and were no doubt rendered much more habitable thereby. Their external beauty was, however, as a rule, destroyed. Half-timber construction died a natural death, more lasting and weather-proof materials taking its place.

But behold, it has recently been galvanised into a curious and mutilated sort of re-existence. The illustrations in the building papers tickle our astonished eyes with views of country houses, with any number of half-timbered walls and gables, some few rivalling in external charm any old examples.

But let us look a little closer. What is this which is growing up inside the timber house? It is a brick house. The edifice is not a real half-timber house, but a sham. The inner wall, the real house, is probably too thin to keep out the wet, but sided by the half-timber construction outside will be dry. This is the way the more important mansions are constructed.

Lodges and small structures are occasionally real timber construction, without the brick house inside: for so long as the great man is warm, it does not so much matter that the family at the lodge should catch cold.

Now, it cannot fairly be urged as an excuse for the half-timber skin that it is only another form of a hollow wall or of a tile-hung wall. In the case of a hollow wall, each skin is of the same material, of equal durability, and is bonded together. In the case of a tile-hung wall, a somewhat pervious material,—it may be brick or stone,—is, in a very straightforward and genuine way, protected by an impervious skin. The skin is clearly something fixed to the wall; but the half-timber skin pretends to look, more or less, constructive. We see crossties, struts, and other devices introduced. At the best, it is not so impervious a skin as tile-hanging or a good coat of rough cast. The thing is a sham, and architecture cannot really be advanced by the use of sham construction, however pretty or clever it may be.

And what has the introduction of this sham half-timber already led to? Let me invite you to walk about the rising suburbs of the town, and you will see. The jerry builder and the surveyor-architect have produced, as they think, the full effect at the least cost. They stick planks on the wall and imbed them in cement. Beautiful devices of a very round sunflower, standing on a very straight and stiff stalk, are impressed on the plaster panels. The house is, at once, invested with artistic merit, and leaves nothing to be desired. You have an "Early English House." Whilst I think the modern pretence at half-timber construction is the greatest abuse of a good material like wood, we may, if we keep our eyes open, see how terribly this material has been and still is ill used in other ways.

What is wood, as we get it? It is a fibrous substance with more or less straight grain, suited to use in forms more or less rectangular; not well suited to use in solid lumps, but worked to the best advantage as framed work and thin panels.

Now I maintain that what I have here said is not controvertible, and my proof is that where wood is to be used simply for utilitarian purposes, making the most out of the material, and with no architects bothering about "styles" and "periods," there good straightforward framing will be found. When the gentleman who does the framing developes a taste, then one cannot say what follies or atrocities may not be committed. Thoroughly good woodwork will, therefore, be a thing of posts, rails, and panels. Let us apply this rule to good fifteenth-century screen-work, and it will be found that, to a great extent, it can always be reduced to posts, rails, and panels. The panels are, perhaps, pierced and cut into arcuated forms; in rich work there is an attempt at groining (not defensible), but you would find it exceedingly difficult to execute the design in any other material than the one in which it is made, and subservient to the peculiarities of which it has been designed. At this place I must ask leave to make a little digression on the history of woodwork.

It is a curious circumstance that our forefathers seem to have been much more slow at arriving at a good use of wood than of stone. How very early, even in the Transitional period, they were perfect masters in stone construction! Never before did people build so well and scientifically with small stones, making the very best they could out of materials easily handled, and so they went on with still more science to the time when the Renaissance blighted and withered up all the good that was in them. They ceased to think, and became mere imitators.

Not so with wood. They seem to have hacked and hewed at the logs of wood as if they were stone; they could not get constructive arches out of their minds, and consequently some of the oldest pieces of screen-work we have left are not well constructed; but consist of a plank cut into rows of little arches standing on columns, with little bases, bands, and caps. There is not much good framing about the work, and it is owing, no doubt, in part to that circumstance, we have so few specimen remaining. Perhaps the most splendid specimens we have of fine work of this period are the choir-stalls at Winchester Cathedral. In order to get a sufficiently thick effect these are built up, one set of mouldings pegged on in front of another, for no doubt they had already found how treacherous a log was, and that for fine work joinery must be used, not carpentry. The design of these stalls is really suited to cast metal better than to wood construction. The Ely stalls are a little later, and are more essentially wooden. But there can be no question that the stalls of St. George's, Windsor, of Henry VII.'s Chapel, or of the Lady Chapel at Winchester, are wooden, and nothing but wooden. The latter are a most beautiful instance of posts, rails, and panels decorated most appropriately.

Then comes the Renaissance. We have woodwork of this type,—very fine it is,—in the choir of St. Paul's. On the side towards the choir the design is fairly wooden, but the screens towards the aisles are stonework pure and simple, done in wood. Corinthian columns, architraves, friezes, cornices, with not a hint that the material is wood, except where it has obstinately asserted itself and split or twisted.

Having made this digression into history, it remains to consider how we treat the material. I fear we think much more about style than about material. The mouldings we use for our modern mantel-pieces are distinctly stone mouldings, and there is no denying it. So for the door-heads, and they would be better made in stone, in many cases, than boxed out elaborately in wood, as they are. I do not pretend to have found a remedy for this sad state of things, but I see clearly that it exists.

Then, let us examine much of the woodwork that has been done of recent years in our churches. As we all know, and many of us well remember, following upon the Tudor period of the pioneers of the revival, there came a wave of reaction in favour of "early work," as it was called. We have plenty of early buildings for study,—twelfth and thirteenth century, and earlier if you want them. It stands to reason,—*i.e.*, architectural reason,—that if you imitate an "early" building you must also have "early" fittings; but however early the student got up, he could unfortunately find but very few remains of woodwork contemporary with the stonework he so much loved. So, out of what he could find, he developed horrors and abomination out of logs and stumps, notched, hacked, stop-chamfered. How the playful genius and learning of Burges, and the manly boldness of Street, struggled with these things! But the pricks were all too hard for them to kick against. It now seems that common sense is at last asserting itself, and we see that men who till lately worked on the same lines are now adopting a late type of woodwork. Let us hope that this is not a wave of fashion, but honest conviction.

I well remember in the days of my pupilage how, when a certain cathedral was to have its stalls adorned with canopies, a cast of a highly-enriched canopy at the head of a recumbent effigy, the whole in Purbeck marble, was taken as a model and closely copied in oak! On another occasion, a pulpit was to be set up. It was designed to be made of wood. The plan was a slightly-lobed circle. On each face a figure in considerable relief was to be placed under a trefoil arch. Stout little columns were supposed to carry these arches,—the surface of the columns being "gemmed," as it was called, with little knobs of boxwood, rosewood, &c. Nothing more unsuited to wood than was the general design could have been imagined. The estimate was too high. So the material was promptly changed, and the design, almost unaltered, was carried out in Bath stone, and may be seen to this day. Now, we can laugh at a thing like this, but do we never do the same, or something near akin, or see it going on all round us?

Why is this? Because we are bothering about styles and periods, grammatical correctness, &c., and not first and foremost thinking of the common-sense use of our materials.

Let us take train and go to St. Alban's, and have a pleasant day with Lord Grimthorpe. What is the matter with his lordship's west front, of which he is so proud? I doubt whether you will find a much more solid piece of construction anywhere. So far as his knowledge has taken him, the work is thoroughly well done, and from that point of view is very good. It is his lordship's unfortunate effort to invest this piece of construction with artistic merit, to struggle with the styles, and launch himself into regions of which he knows nothing that has made him fall so flat on the ground, We have here an example of good construction setting forth a bad design, whilst the subject of my lamentation generally is that we see many pretty designs regardless of construction. I am genuinely sorry for his lordship that the front is so well constructed as I fear it to be. Surmounted as it is by a big tombstone, instead of a gable cross, it will rear its head for many years as an example how not to do it. You will think that I have wandered into the regions of stone construction and not of wood, but the especial object of pilgrimage at St. Alban's should be the new woodwork, namely, the west doors, and the glazed side screen shutting off the nave aisle from that of the choir. In the side screen, especially, the absurd absence of construction is only equalled by the poverty of the pattern (I cannot call it a design). As it pretends to be Gothic it is bound to have pointed arches, and it would be a wonder if a modern joiner could not make any absurdity stick together somehow. The work has all the demerits and none of the merits of the west front. No hectoring and blustering can make bad construction into good, or make this screen other than contemptible. You may remember the organ-case in the Norman style which was till lately in St. Alban's Abbey, with fat columns and cushion caps all in wood. When the extravagance goes far enough we all see how absurd it is, but if the result be pretty or graceful, and please the eye, we are apt to rest satisfied and not to exercise the judgment.

Now, what I want to convince my audience is that criticism based on mere fancy and without judgment is of little value. We cannot all agree on the fancy side of the question, but we can bring to bear certain rules whereby we can decide on good or bad construction, and a right or wrong use of materials, and so have at least one piece of common ground.

Let us now leave the use and misuse of wood, and look again into David's scrip. Herein I find another stone, and this seems to be intended for the devoted head of terra cotta,—that is to

say, terra cotta as we see it generally used in England, namely, as sham stone.

What is terra cotta? Baked earth. It is in fact a glorified form of brick, and a very excellent material, the revived use of which is to be thoroughly welcomed. But I want to call your attention to the way in which we use it. We must not overlook the fact that it is a material the production of which is beset by many "conditions," if I may use the word.

Being a brick, it must be dried and baked; in these processes it will not only shrink, but warp. Under such circumstances it cannot be used in pieces of any size without showing twisted lines, uneven edges, and consequently, in work, thick and irregular joints. To avoid these difficulties it must be used in small pieces, for no expenditure of time and ingenuity on the part of the producer can ensure uniform success in his efforts at production. To make large pieces he hollows the blocks, and they cannot be used till they are filled in with concrete. In fact, the pretended block of terra cotta is a sort of pie, with a crust of one material and contents of another. Now, if we study terra-cotta construction in its home,—the plains of Lombardy,—we shall find that the material was not used, or, rather, misused, as it now is with us. The pieces are small, the joints are very numerous, their lines are consequently true, and the building looks like what it is. Ashlar facing of terra cotta is, I think, an invention of these times, and a more flea-bitten looking thing can hardly be found. The same material used of the size of bricks is most agreeable to the eye, and is better construction. There are few places in which genuine terra-cotta construction can be better studied than in Bologna. Here we can see that the architectural features, many of them as bold as they would usually be in stone, are all modified to suit the material; very few pieces of large size are introduced, and when they are, they are obviously thin plates, set between projecting mouldings. As the so-called Renaissance advanced, and architects became more and more of blind imitators, and cared for little but correctly "observing the orders," so genuine use of the material died out. The mere imitator and student eclipses the genuine inventor and constructor. The material, not lending itself to a Palladian masquerade of genuine architecture, was ultimately disused.

In this country the use of terra cotta in blocks, and as a substitute for stone, seems to be universal, and to all sorts of dodges and devices are the architect and the manufacturer driven. With the exception of some two or three houses near Grosvenor-square, I have not been so fortunate as to observe a new building in which the lessons to be learnt so easily in Italy have been turned to profit. And we need not go to Italy for examples of how to use the material. In our own Eastern Counties our ancestors have used it to full advantage.

How comes it that the system of using terra cotta as a sham stone is so general? So far as I know, it first reappears in this country in the beginning of this century, when we find it used deliberately as an imitation stone. It came in with cast-iron window-heads, and may be found, in sundry early efforts of the reviving Gothic, used for pinnacles and finials. I believe that it was made of a colour, called "architect's colour," as near as possible to stone. So much for the architects! Then it came out in great force at St. Pancras Church. The die was cast. Sham stone was its beginning, and as sham stone it has continued its course, no one having taken the trouble to get out of the rut and think what it really is.

I should like to be allowed, at this point, to make a slight digression. You will say that I have been growling, grumbling, and finding fault. I assure you that I do not wish to set myself up as better or more observant than my neighbours. I know that the force of circumstances often compels a man into carrying out a design in a way that his better judgment can hardly approve.

It is, as a rule, easier and cheaper to follow in the groove established by one's neighbours than to make any independent start. The extraordinary uninventiveness of the average British workman, his slavish adherence to certain set methods, his entire want of taste or appreciation, all these things are terrible barriers to be overcome. So long as a job looks smug and neat, no more can be wished for. The master builder is seldom better than his man, and when we see the unlovely streets in which not only the workmen but their masters and we ourselves are forced to live, can we have much cause for wonder that men are blind to beauty, and have all love for it beaten out of them?

And again, I firmly believe that there never was a time in which architecture was so thoroughly difficult to practise as it is now, especially in domestic work. The necessities of modern civilisation have complicated our plans to a degree undreamed of a hundred years ago. Look through the house-plans engraved in Colin Campbell's "Vitruvius Britannicus." We see at a glance that they must have been uncommonly easy to make, and that the houses built from them were thoroughly bad. Again, how many hundreds of men have struggled, within the last few years, to make a satisfactory façade combined with a shop-front, and have any succeeded? It has struck me that many of these buildings look their best when the bare ironwork of the ground story is still unclothed, and the inch slab of red granite, set on end, which pretends to support a 20-ft. span of stone entablature, has not arrived from Aberdeen. Why can we not show the legs on which the house stands? I know but too well that the shopkeeper loves the red granite trowsers. I have had them forced down my throat. But woe be to those men who began this architectural humbug.

We should probably have avoided most of these feeble subterfuges and misuses of materials had architecture been a living art instead of a thing of mouldings, and styles, and periods. It is never too late to try and mend; and I contend that until a material is properly used and our design thought out entirely with regard to the conditions it imposes, and quite regardless of styles and periods, we shall never get out of the slough, or make any real improvement all along the line.

To dip once more into David's scrip, I find a stone labelled "Metal Work." You will say, and truly, that the craft of the metal-worker retains more of the genuine ring about it than perhaps any other handicraft, and I think it is so, but we must confine our approval to wrought iron only.

It does not seem easy to go wrong so soon in dealing with wrought iron as with cast. It has never been in vogue to try and imitate cast iron in wrought metal. But the other thing, the imitation of wrought metal in cast, we see on all sides. The fashion called after the good Queen Anne has not only given birth to many most beautiful specimens of wrought iron, but it has flooded the market with cheap imitations in cast work, with groups of bars held together by make-believe collars and straps, and with panels which directly aim at representing all the conditions of wrought work. The pattern-book of any manufacturing firm will prove the truth of my statement. The French have been particularly successful in this sort of sham.

Why should not cast iron be treated as such? Although wrought iron has an interest all its own, from carrying, as it does, the direct manipulation of the craftsman, cast iron has also abundant capabilities. I can give you one reason why cast iron is generally ill-designed. There are not ancient examples to "prig" from. Its general use is a modern development.

I venture to affirm that a well-thought-out chancel-screen of cast iron would be far more effective than those fidgety spiders' webs of wrought iron, which, as a rule, have no result but to confuse the eye.

Let us leave the Iron Age and enter that of brass. Let us imagine ourselves in the show-rooms of "Messrs. Twist & Corkscrew, ecclesiastical furnishers." What fearful and wonderful things do we behold! Lecterns, fire-dogs, communion-rails, pokers and tongs, altar candlesticks, coronæ, and other glittering things in brass, shoulder all manner of twisted and contorted things in iron, not unfrequently painted red, black, and powder blue. How hard and unsympathetic the brass things look! They shine with a cold glare, or else they look like wrought-iron work done in brass.

Brass is, like iron, a metal that can be twisted and wrought, or it can be cast; but it does not lend itself to wrought work as iron does, and its greatest beauty, its rich colour and splendour of surface, is to be got only in cast work. Hammered plates are often very splendid, but they never attain the sumptuous effect of fine cast and polished work.

Messrs. Twist & Corkscrew's stock of lecterns, candlesticks, and altar crosses will probably and almost certainly be of cast work. Why, then, have I accused these articles of shining with a cold glare?

Compare a modern stock lectern or candlestick with an old one, and you will soon see the difference; but there must be hundreds and thousands of men who never have seen it, or, at any rate, do not appreciate this difference, or the things, not finding purchasers, would not be made.

The component parts of a modern stock lectern professing to follow (generally) an old design, will consist of a brass pipe, banded with prim-looking rings; this pipe frequently stands on a brass cone with trimmings. It ends above in a nondescript capital with applied leaves; thereon is a brass ball, upon which a flabby looking fowl balances himself. This piece of furniture is occasionally enriched with "gems," —lumps of ruby glass, like currant jelly, sticking out of brass frills. The whole thing, "Very handsome,—price fifty guineas!" The cone is a perfect cone, the pipe a perfect cylinder, which gives a hard vertical line of reflection all up one side.

Let us turn to the old lectern. The one idea of its maker seems to have been to model all his surfaces. He knows better than to start at the bottom with a cone. He has a fine sweeping ogee curve for the section of his lectern base, the big surface contrasting by its broad reflections with more delicate mouldings above and below. The piece of stem between each band is not a pipe, but its vertical section is slightly hollowed, giving a totally different effect to the reflections from those of a pipe. The old lectern looks sumptuous: the modern one cheap, vulgar, and pretentious, and the lumps of jelly are simply silly. They pretend to be precious, —a thing set in a socket as a jewel pretends to the qualities of a jewel. We all know that a lump of white or red glass is not very precious, except in the eyes of a savage. What a truly magnificent thing is the ancient lectern at King's College Chapel, Cambridge, quite without trimmings or gems. It is well supported by the two great candlesticks, designed by Mr. Gilbert Scott, and made by Messrs. Barkentin & Krall. They leave nothing to be desired, and show that both the designer and craftsmen thoroughly appreciated those subtleties which form the beauty of the old work. The unsympathetic stuff in the showrooms of Messrs. Twist & Corkscrew is cheap (or, more properly described, is dear at any price). The work, properly done, is somewhat more expensive, but what an amazing difference there is in the result!

Much more may be said on this subject, but time does not permit us to do so, or take more stones out of David's scrip, but numbers yet remain behind. I can only thank you for your forbearance, and again repeat that it is not for the pleasure of finding fault that I have ventured to read these very imperfect remarks this evening. I have tried to show what I believe to be right wherever I have pointed out what I believe to be wrong.

[Some notes of the discussion which ensued are in type, but we hold them over until next week.]

THE SURVEYORS' INSTITUTION:

STUDENTS' PRELIMINARY EXAMINATION, 1888.

OF the candidates who presented themselves for the Preliminary Examination for the admission of Students, held on the 17th and 18th inst., the following satisfied the Examiners:—

Aldridge, Joseph Arthur.
Barclay, Thomas.
Brightman, Herbert E.
Buckland, Herbert T.
Church, Leonard R.
Cobham, George W.
Crookes, Charles R.
Elwell, Mortimer C.
Foster, Frank.
Garrard, Arthur N.
Garrod, John R.
Giddy, Osman H.
Gover, William B.
Hadley, Frank.
*Hampton, George Frederick William.
Hawkins, Francis H. G.
Hawkins, Frederick T.
Hayward, Frederick G.
Kaye, Edward P.
Lawley, Frederick W.
Lichtenberg, Franz B.
Linsell, William D.
Martyn, Archie C. C.
Molyneux, Herbert E.
Morter, Sidney P.
Muir, James.
Oakley, Christopher P.
Ogden, Michael G.
Payne, Harry G.
Pochin, Thos. C. P.
Price, Matthew B.
Rowley, William T.
Sedgwick, Rupert W.
Spelman, William W. R.
Summerfield, Joseph C.
Swainson, Francis C. J.
Taylor, William H.
Verity, Ernest G.
Wilson, Frederick R.

* Passed at the head of the list.

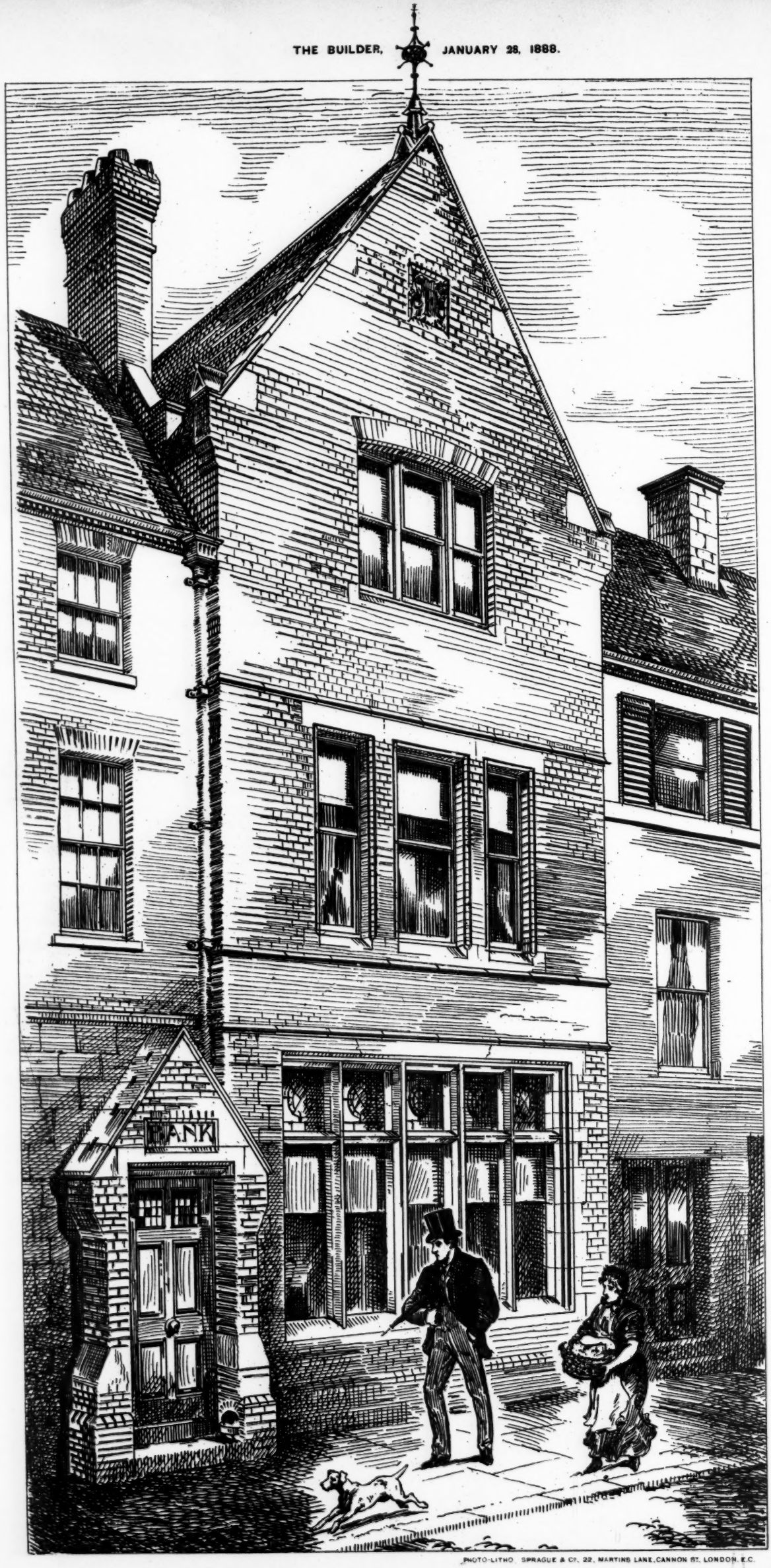


PHOTO-LITHO. SPRAGUE & Co., 22, MARTINS LANE, CANNON ST. LONDON, E.C.

BANKING PREMISES, BISHOP STORTFORD.—Mr. John Slater, B.A., Architect.

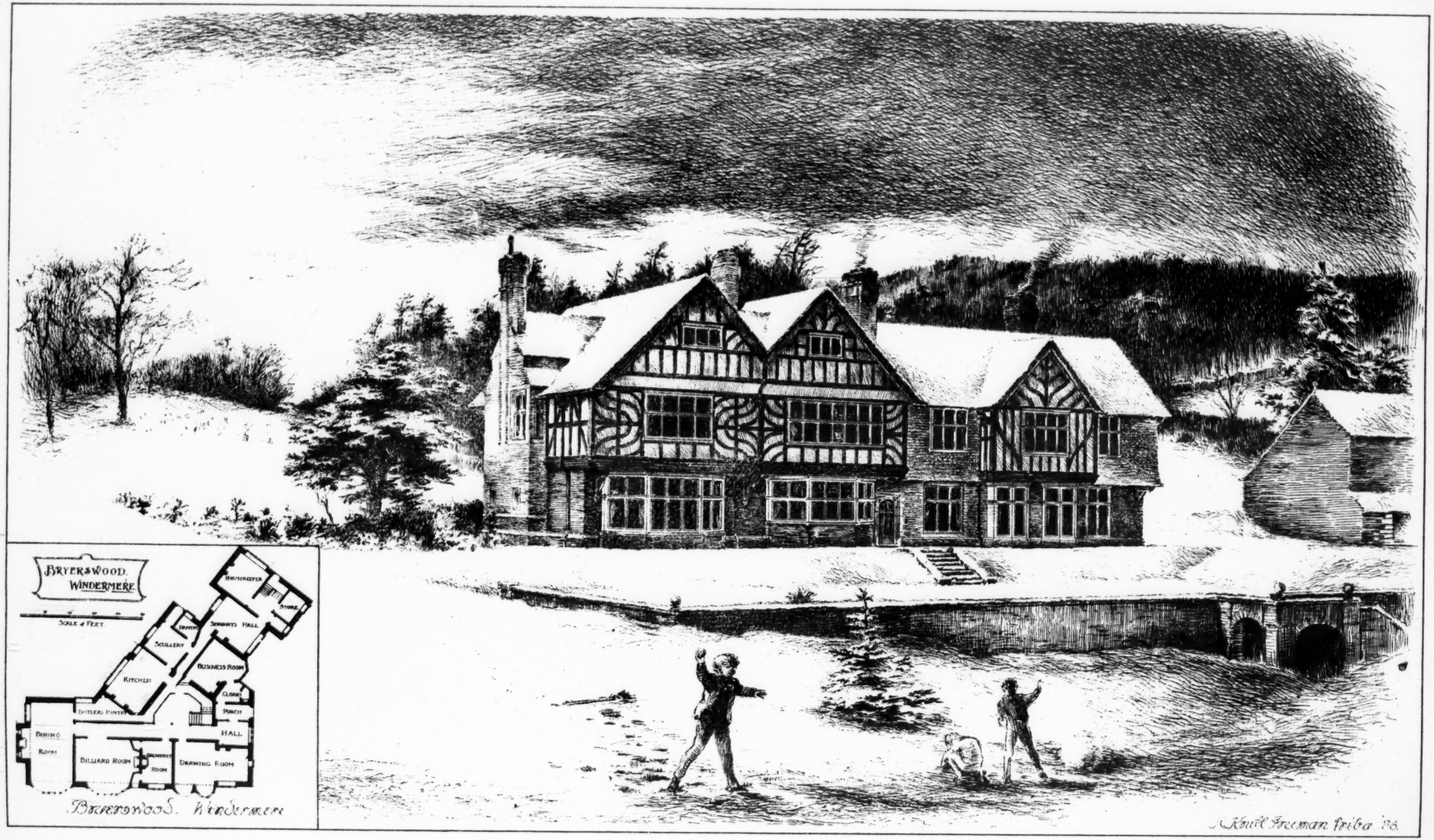


PHOTO-LITHO., SPRAGUE & Cº 22, MARTINS LANE, CANNON ST, LONDON, E.C.

BRYERSWOOD, WINDERMERE.—Mr. R. Knill Freeman, F.R.I.B.A., Architect.

ROYAL ACRE[illegible]

DESIGN FOR A [illegible]

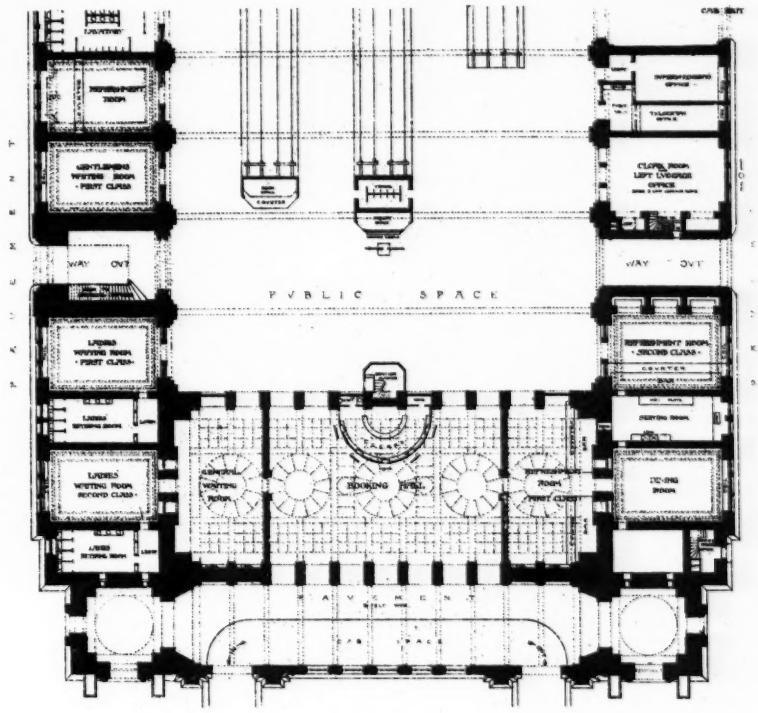
By W. [illegible]

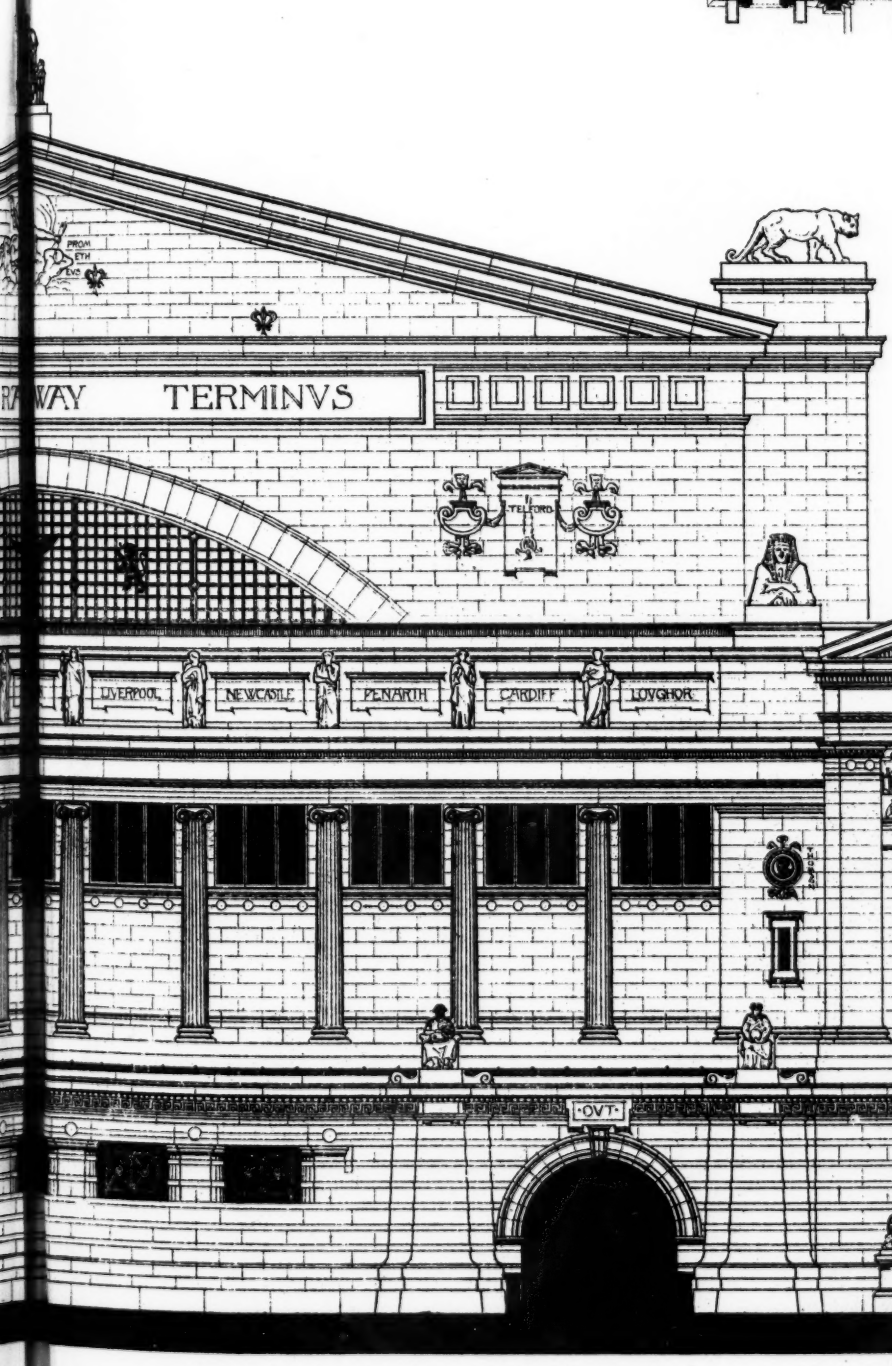
SCALE OF [illegible]

EMY OF ARTS

AILWAY TERMINVS

W. Leck.





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SIC DEVS DILEXIT MVNDVM

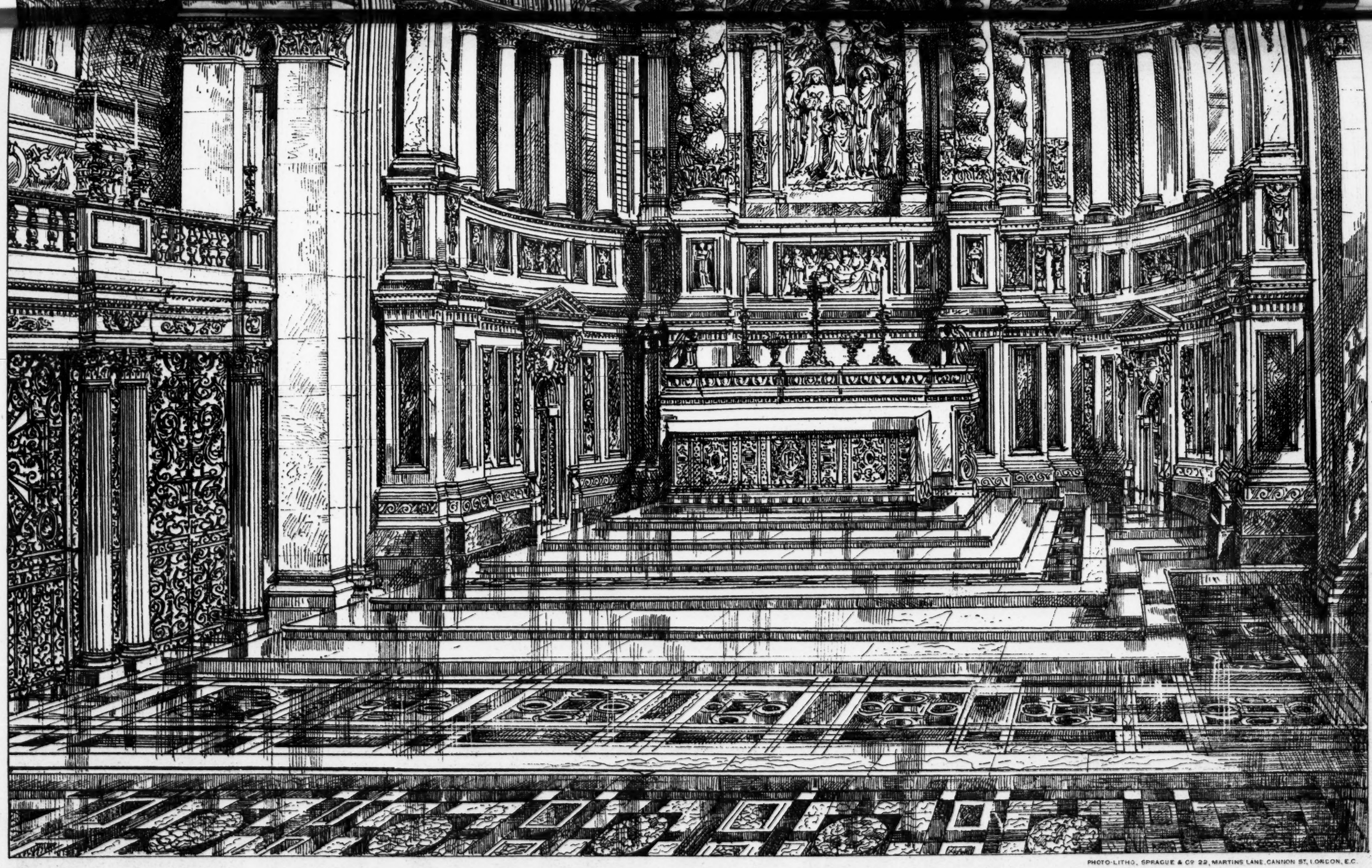
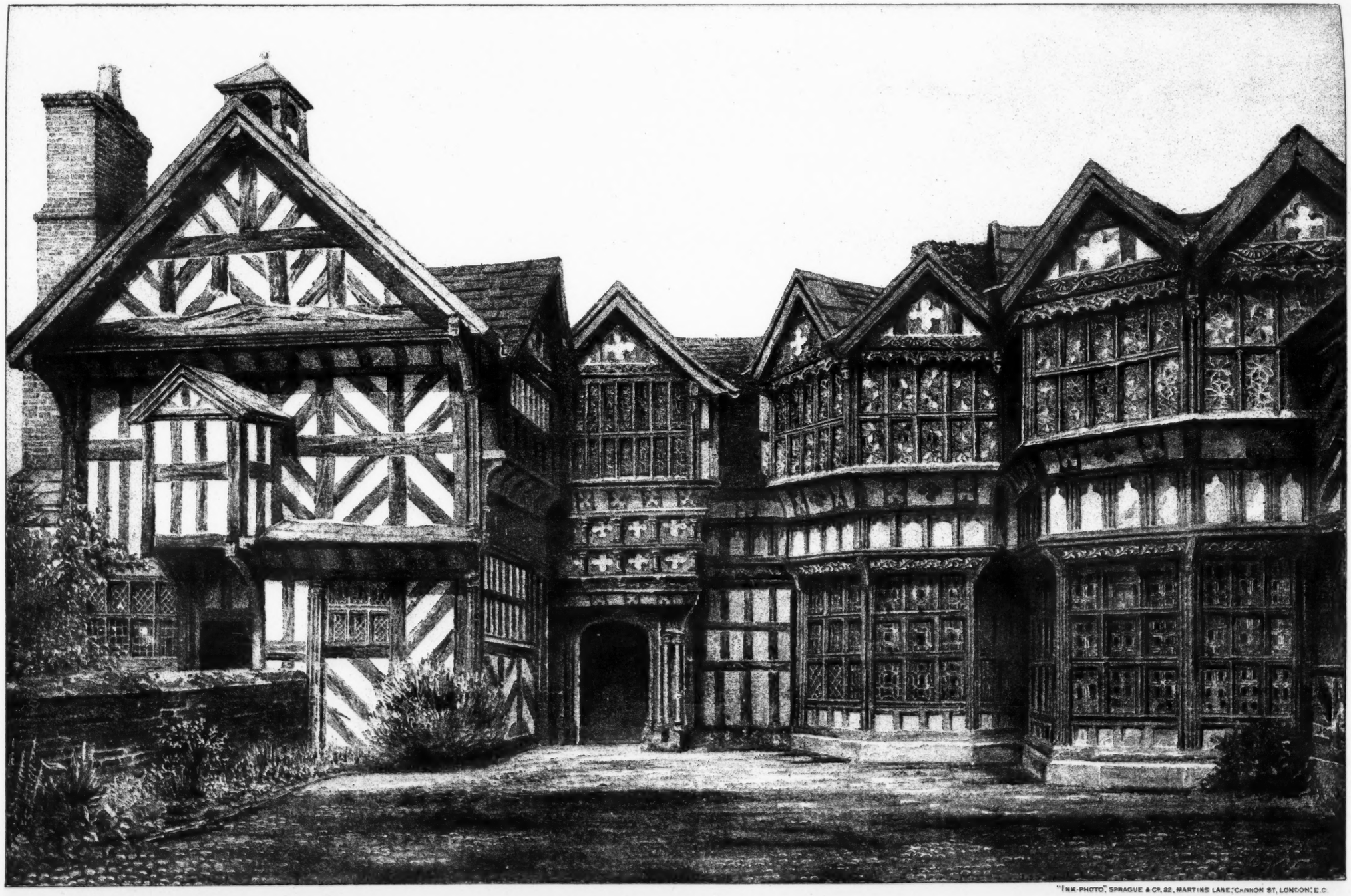


PHOTO-LITHO. SPRAGUE & Co 22, MARTINS LANE, CANNON ST, LONDON, E.C.

THE NEW REREDOS, ST. PAUL'S CATHEDRAL.—Messrs. Bodley & Garner, Architects.



"INK-PHOTO," SPRAGUE & Co, 22, MARTINS LANE, CANNON ST, LONDON, E.C.

MORETON OLD HALL, CHESHIRE.—From a Water-Color Drawing by Mr. R. Knill Freeman, F.R.I.B.A.

PHOTO LITHO. SPRAGUE & Co. 22, MARTINS LANE, CANNON ST. LONDON, E.C.

ST. CHAD'S COLLEGE CHAPEL, DENSTONE.—Mr. R. H. Carpenter, F.R.I.B.A., Architect.

Illustrations.

THE NEW REREDOS AT ST. PAUL'S CATHEDRAL.

WE are enabled this week to give a view of this important work. The following description of it has been sent to us by the architects:—

"A dignified and suitable altar-piece or reredos has, no doubt, hitherto been the great want of St. Paul's Cathedral; indeed, without it the church could not be said to be complete. Sir Christopher Wren is said to have prepared a magnificent design. According to the *Parentalia*, the painting and gilding of the architecture of the east end of the church, over the Communion-table, was intended only to serve the present occasion, till such time as materials could have been procured for a magnificent design of an altar, consisting of four pillars wreathed, of the richest Greek marbles, supporting a canopy hemispherical, with proper decorations of architecture and sculpture.

When the Chapter generously determined to undertake this important work, the arrangements of the cathedral had been completely altered from those originally made. The screen and organ-loft had been entirely removed; the choir extended towards the west, the space under the dome and the nave appropriated to the congregation; and, consequently, the altar necessarily brought forward from the apse. The choir being thus thrown open, it was essential, in designing a reredos intended to be seen at a great distance, to make it sufficiently large, and at the same time carefully to avoid anything that would diminish the scale of the cathedral.

The design prepared for the new reredos was entrusted to Messrs. Bodley & Garner, and was especially the work of Mr. Garner. Having been approved by the Chapter, and having received the sanction of the Decorative Committee, it was suggested by the late Mr. Fergusson that marble screens should be substituted for the iron grilles at the sides, which were at first proposed, and that their form should be semicircular. This plan has been adopted, and the heights made to range with the architectural lines of the building.

The design consists of a basement, against which the altar stands, with a small doorway on each side to give access to the apse behind. Over these doors, which are of pierced brass, are angels supporting shields of the crossed swords and keys, the arms of the diocese and St. Paul and St. Peter, and they are flanked by sculptured festoons of fruit and flowers, separated by marble panels. Above this is a range of sculptured panels with coloured marble backgrounds, supporting an open colonnade of semicircular plan. A large group of sculpture, a sort of carved picture in bold relief, occupies the centre, flanked on each side by twisted columns of rich Brescia marble, wreathed with foliage in gilded bronze. These support an entablature and rich pediment. The frieze is of Rosso Antico, bearing the inscription 'Sic Deus dilexit mundum' in gilt bronze letters. The whole is crowned by a central niche and surrounding statues.

The general idea of the sculptured subjects is to express the Incarnation and Life of our Lord, beginning with the two figures at the extremities of the colonnade, which are those of the Angel Gabriel and St. Mary, and represent the 'Annunciation.' The panel on the north side is the 'Nativity,' the large subject in the centre the 'Crucifixion,' with the 'Entombment' underneath it; and the group on the south side the 'Resurrection.' The panels of the pedestals are filled with angels bearing instruments of the 'Passion.' The niche above the pediment is occupied by a figure of St. Mary with the Divine Child in her arms, with the statues of St. Paul and St. Peter on either hand. The figure on the summit of the niche is an ideal one of the risen Saviour.

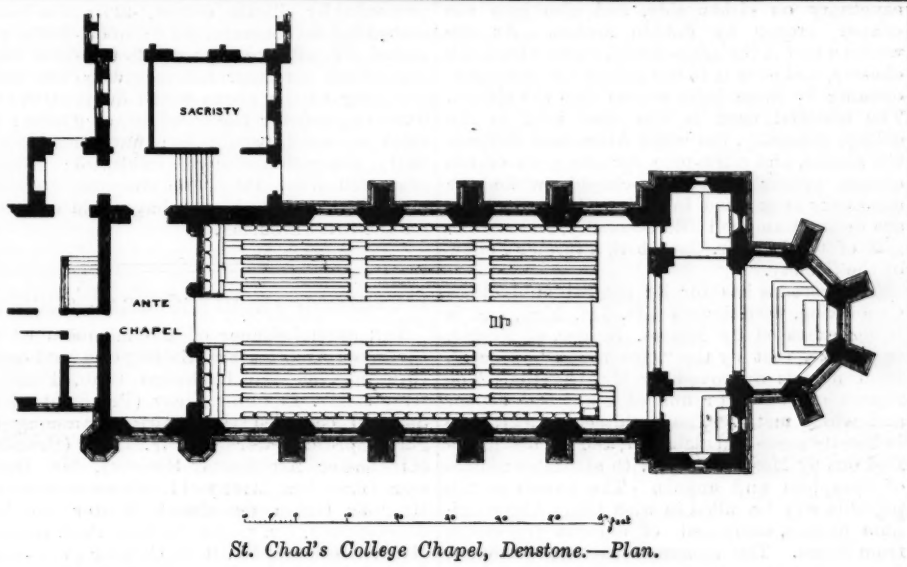
The entire reredos is executed in white Parian marble, with bands and panels of Rosso Antico, Verde di Prato, and Brescia marble. The enrichments are generally gilt. The steps in front of the altar are of white marble, and the pavement of Rosso Antico, Brescia, and Verde di Prato, like the reredos.

It is intended to place wrought-iron screens at the sides of the Sanctuary, using some very fine iron gates of Sir Christopher's design now in the crypt, which were removed from the choir at the time of the alterations.

The whole of the work has been most admirably executed by Mr. Brindley, of the firm of Messrs. Farmer & Brindley.

The models for the sculpture were done by Mr. Guellemin, and those for the ornament by Mr. George.

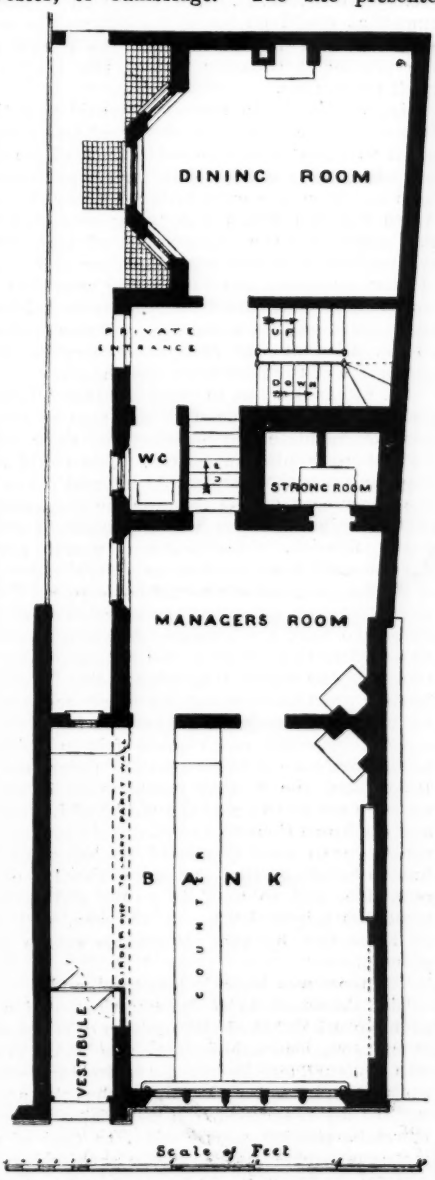
The gilded bronze work is by Messrs. Longden & Co. from models supplied."



St. Chad's College Chapel, Denstone.—Plan.

BANKING PREMISES, BISHOP'S STORTFORD, HERTS.

WE illustrate this week a new Branch Bank, just completed at Bishop's Stortford, for Messrs. Foster, of Cambridge. The site presented rather unusual difficulties, as the upper part of the adjoining premises (which could not be purchased) projects about 5 ft. over the ground-floor of the bank, and there is a difference of level of over 6 ft. between the front and the back of the building.



Plan of Banking Premises, Bishop's Stortford.

The materials used were red bricks, from Brown, of Braintree, the ground-floor windows and the dressings throughout being of red Mansfield stone, from Messrs. Lindsay's quarry. The whole of the stonework was prepared at the quarry from the architect's full-size details, and was sent to the job ready for fixing.

Mr. John Slater, B.A., of London, was the architect, the contractor being Mr. W. Cornwell, of Bishop's Stortford. Messrs. Lindsay & Co., of the Paddington Ironworks, supplied the constructional ironwork.

DESIGN FOR A RAILWAY STATION.

THIS design, by Mr. W. Leck, was one of the most meritorious (next to the prize design, which we have already illustrated) of the Royal Academy Student's designs sent in in competition for the Gold Medal for Design in Architecture, the subject this year being a railway terminus. Mr. Leck's design was No. 331 in the hanging, under which number we commented on it in our notice of the student's designs in the *Builder* for December 17th of last year (p. 835).

BRYERSWOOD, WINDERMERE.

THIS house, the residence of Mr. J. R. Bridson, has recently been completed from the designs of Mr. R. Knill Freeman, F.R.I.B.A. The materials used are local stone for the walls of the ground-floor, with red stone dressings; the upper parts being either of timber framing or tile hanging. The chimney-stacks are of brick, and the roofs are covered with red tiles.

The chimneypieces and other internal fittings have all been designed to harmonise with the general character of the building.

The stonework has been carried out by Mr. Joseph Taylor, of Sawrey; the other contracts by Mr. Brownrigg, of Bowness. The stained glass has been executed by Messrs. Shrigley & Hunt, of Lancaster.

MORETON OLD HALL, CHESHIRE.

THE view we give of this well-known and picturesque old house is reproduced from a water-colour drawing by Mr. R. Knill Freeman, and is an interesting example of one of the best periods of domestic architecture.

THE CHAPEL OF ST. CHAD'S COLLEGE, DENSTONE, STAFFORDSHIRE.

THE College of St. Chad is for boys of the middle classes, and is in connexion with Lancing College, Sussex. Its buildings have been in use for many years, but with only a temporary chapel and dining-hall. The permanent chapel is now, excepting some of its fittings, completed, after having been in progress for about eight years. It stands on the southern side of the "Lonsdale Quadrangle," of which the dining-hall will form the northern side. The existing central block includes the great schoolroom and other buildings. Excluding the sanctuary and ante-chapel, the internal dimensions of the chapel are 88 ft. long by 38 ft. in width. The sanctuary is 23 ft. in width, and flanked by towers, containing a chapel opening into the

sanctuary on either side, and also into the chapel proper by double arches. At the western end is the ante-chapel, entered from the cloister, and over it is the gallery for the organ, opening by three lofty arches into the chapel. The material used is like that used in the college generally, the white Alton and Hollington stones, and pitch-pine for the roofs of the chapel proper and ante-chapel, while the sanctuary is grained in stone. The tile floors are by the Campbell Tile Company, and are the gift of the late Mr. Campbell, a former Fellow of the Society.

The reredos has for its central subject the Crucifixion, with figures 4 ft. 6 in. high, and is being executed by Messrs. Singer, of Frome, in bronze, cast by the "cire perdu" process, from models approved by Mr. Clayton. The figures are on a ground of embossed copper and white metal. The architectural parts are in Steetly stone and alabaster, and are being carried out by Messrs. Earp, with alabaster figures of Seraphim and angels. The panels of the predella will be filled in with Opus Alexandrinum mosaic, composed of ancient fragments from Rome. The figures, with their canopies, &c., on the sides of the apse, will be added from time to time as distinct memorials. They will be in alabaster.

The western stalls and traceried screens are in oak, and have been executed by the College workmen, under the clerk of works, Mr. Garland.

The lectern is of bronze, with a central surmounting figure of St. Chad, with the emblems of the evangelists at the base. The "Gospel lights" are also of bronze, and, with the lectern, are executed by Messrs. Singer.

The east windows of the apse and of the towers are filled with glass by Clayton & Bell. The organ is being built by Messrs. Hill & Son, and will have its choir organ in front, occupying the central aisle, and with shutters to it, as in the Spanish examples.

The heating is by Messrs. Musgrave, of Belfast. The constructional works have been carried out in various separate contracts, by Mr. Ford, Messrs. Booth, Mr. Yates, and lastly by Mr. Bentley, of Waltham Abbey, who has erected the roof and groining, and executed the floors, &c. The design is by the College architects, Messrs. R. Herbert Carpenter and B. Ingelow, of London.

The cost of the whole, exclusive of reredos, fittings, glass, organ, &c., is upwards of 1,300*l*.

EXPERIMENTS WITH SILICATE COTTON.

FURTHER experiments with silicate cotton as a protector for iron and other girders, were carried out last week in a special building erected in Southwark. Since the former tests, noticed in our edition of the 7th inst. [p. 6], the side walls have been raised 18 in., in order to confine the flames and concentrate them upon the joists, which were arranged as before; but in place of the unprotected deals, there were two 4-in. rolled iron joists, 13 ft. long, and in sections 14 in. by 7 in., embedded in solid concrete; and these were placed 6¼ in. apart, being braced together, by ⅝-in. bolts and distance pieces 2 ft. apart. Further, to prevent the concrete from cracking, pieces of ¼-in. iron rod were twisted round the girder at every 10 in. In this way the concrete was secured to the joists in a way never attained in ordinary building. The silicate-cotton-coated girders were treated as before, there being a layer of silicate cotton about an inch in thickness, held together by small wire netting and faced by a cement of plaster and silicate.

The beams and joists were loaded, as before, with iron pigs weighing 30 cwt. The heat of the fire was over 1800° Fahr., and the temperature close to the joists varied from 1,500° to 1,700° Fahr. The fuel was wood and Welsh coal urged by air blast. The fire was lighted at 11·47 a.m., and the experiments were continued until 7·39 p.m. At 11·58 a.m., after only eleven minutes' exposure, the unprotected iron girder commenced to give way. At 4·59 p.m., after five hours and twelve minutes' exposure, the wood beams succumbed. The concrete-protected girders gave in at 7·38 p.m., after seven hours and fifty-one minutes' exposure; and one minute after the silicate-cotton-protected girders followed. The relative times before the giving way of the beams and joists were: unprotected iron beam, 1·0; iron beam protected by silicate cotton, 42·9; iron beams embedded in concrete, 42·8; wood joists protected by silicate cotton, 28·4. The mean expansions per hour before giving way corresponding to the above were: 3·6 in., 0·072 in., 0·094 in., and for the wood *nil*, of course; the ratio of which would be: unprotected iron, 50·0; concrete-protected iron, 1·3; silicate-protected iron, 1·0. The concrete cracked a great deal, and would not have held on except for the extra securing.

LIVERPOOL ARCHITECTURAL SOCIETY.

THE annual dinner of the members of the Liverpool Architectural Society was held on the 19th inst. at the Exchange Club, Fenwick-street. Mr. Edmund Kirby (President of the Society) occupied the chair, and among the guests present were Mr. W. Royle (President Manchester Architects' Society), Mr. Darbishire (President Liverpool Engineering Society), Mr. W. Green (president Master Builders' Association), Dr. Edgar Browne, Prof. Conway, Mr. Le Mesurier, Mr. R. S. Cleaver (Vice-president of the Law Society), Mr. F. Holland, Mr. J. G. Webster, Mr. J. W. Davidson, Mr. E. M. Hance, Mr. C. Aldridge, Mr. W. Owen (Warrington), Mr. T. Shelmerdine (City Surveyor), Mr. Clare (Deputy Town Clerk), Mr. A. Culshaw, Mr. H. Hartley, Mr. G. A. Ould, Mr. H. B. Bare, Mr. C. W. Harvey, Mr. J. M. Hay, Mr. H. E. Grayson, Mr. C. W. Blease (Hon. Sec.), &c.

Mr. G. E. Grayson proposed "The Royal Institute of British Architects and other Architectural Societies." He remarked that the Royal Institute had taken a lead in everything for the benefit of architects in the way of education, and also in what they were looking forward to,—the federation of all provincial societies with the Institute as a parent society (hear, hear). He hoped in a short time that would be brought about, and he was sure it would be not only for the benefit of the provincial societies, but of the Institute itself (applause).

Mr. W. Royle, in responding, said that the Institute had been somewhat lax of late years, but it was now being aroused to the feeling that something more must be done for the profession than had been the case hitherto (hear, hear). As to the Bill which was being promoted in Parliament for the registration of architects and engineers, he was not altogether in favour of that measure, and his feeling was that it would never pass (hear, hear). In his opinion, the Royal Institute was doing, and was anxious to do, all that was really necessary for the protection of the profession (applause).

Dr. Edgar Browne, in submitting the "Liverpool Architectural Society," said that he could not congratulate the Society that their lines had fallen in pleasant places. One could not say there was that reasonable interest taken in the adornment of the town or the decorations of the buildings upon which architects alone could flourish. Architecture would never flourish until it got much more general appreciation from the public. He did not suppose there were 300 men out of the profession of architects who took a reasonably decent interest in the architectural beauty of the town. One of the things he hoped that might come from the Society was that they would not only co-operate for mutual improvement, but join together to make themselves much more felt in guiding public opinion in these matters (hear, hear). He trusted the Society would make it one of its main duties to guide the public of Liverpool and the Town Council in reasonably laying out the town so that it should be habitable by human beings, so that its streets should not be repulsive, and so that its public and private buildings might be fit to be seen, and not be blackened by the abominable smoke (applause).

The toast was heartily honoured, and

The President, in reply, said the position of architecture followed the position of trade, and if trade was bad architecture was bad. Trade was reviving, and he hoped architecture would revive (applause). He claimed that the architecture of Liverpool, and especially its commercial architecture, was equal to that of the metropolis (hear, hear). As to architecture in general, he feared there was a silent and slow revolution to pander to the taste of the masses,—a taste which descended, at the expense of good work, to the spirit of the times. The society was now in its fortieth session, and while doing what they could for the advancement of art, they hoped in a practical manner to bolster up one another in the course of honour which it was necessary to follow in their profession (hear, hear). It had been arranged to have papers read on questions of public interest, and he hoped the public would give them credit of trying to do their best not only for themselves but also for the people of Liverpool (applause).

Mr. J. M. Hay proposed the "Kindred Societies," which was responded to by Professor Conway and Messrs. Darbishire, Hance, Le Mesurier, and Davidson. The Chairman gave "The Guests," to which Mr. R. S. Cleaver and Mr. Holland replied. "The Building Trades," submitted by Mr. T. Cook, was acknowledged by Mr. Green.

Mr. C. Aldridge, in proposing "The President," said that it was with very great astonishment he read in the papers that morning that there was every possibility and some probability of the noble scheme promulgated some two or three years ago, for having a cathedral, absolutely falling to the ground. For what reason he could not say. There were three very good reasons why it should not fall to the ground. A competition was invited, and three amongst the most eminent church architects sent in designs, which, whatever might be their individual opinions as to the merits of either, worthily represented the ability and knowledge of design of some of the foremost architects of the day. Secondly, a site, which was one of the grandest in Liverpool, was secured by Act of Parliament; and, thirdly, a noble donation was made by a worthy citizen in order to give a start to the project. Were they going to allow the project to lapse for want of enthusiasm? He hoped they would do something towards its revival, and thus show that Liverpool was not behind other towns in providing a cathedral worthy of the city (applause).

The toast was cordially received, and the President having acknowledged the compliment, the toast list was brought to a close with "The Council and Officers of the Association."

THE INSTITUTE OF BUILDERS.

THE annual general meeting of this Institute was held at the offices, 31 and 32, Bedford-street, Strand, on Wednesday last, Mr. J. Howard Colls, President, in the chair. The Secretary, Mr. Richard S. Henshaw, read the following report for the past year:—

"In presenting their Fourth Annual Report, the Council are pleased to state that the number of Members has now reached eighty-one; it has not yet been thought advisable to admit Associates.

The question of the 'Non-Acceptance of the Lowest Tender,' referred to at the last Annual Meeting, has been carefully considered by the Council, and a resolution on the subject has been prepared, with a view of submitting it to the Royal Institute of British Architects.

Members are aware that the 'Employers' Liability Act' will only remain in force for the next session of Parliament, and as the Government were unable last session, owing to the press of business, to bring in a new Bill, as recommended by the Select Committee of the House of Commons, it is expected a fresh Bill will be introduced early next session. The Council will watch the course of any such measure, and take the necessary steps for the protection of the Building Trade.

The Council have had the draft Bill for the 'Sanitary Registration of Buildings' under their notice, and have requested that the Institute of Builders should be included, with the Royal Institute of British Architects, the Institution of Civil Engineers, and the Royal Institute of Architects of Ireland, in several clauses of the bill, but the Sanitary Legislation Conference declined to entertain any such suggestion; the Council, therefore, intimated to the Secretary of the Conference that they did not acquiesce in the reasons expressed by him for not conceding to their request, and informed him that at the proper time they should take the necessary steps to secure such alterations in the Bill as would, in their opinion, be beneficial to the public.

The Library Fund, which was mentioned in the last Report as having been started, has not met with such success as the Council had hoped for, but they have been able to purchase a considerable number of useful works, and hope that during the current year the number will be much increased; and any donations of books will be gratefully accepted.

It is gratifying to the Council to find that the meetings at which papers have been read by Members of the Institute have met with even more success than they anticipated; and they hope that members will continue to give their support and presence to these meetings for the discussion of matters of interest and importance to the trade. It is also hoped that members will contribute papers for future meetings.

A case of 'Error in Quantities' having been brought to the notice of the Institute, involving a principle of great importance to Builders, the Council, under the advice of their solicitor, have requested Mr. Stanley G. Bird, Mr. John T. Chappell, Mr. J. Howard Colls, and Mr. F. J. Dove to accede to the request of the Builders interested, and give evidence on their behalf.

The Worshipful Company of Carpenters having requested the co-operation of the Institute in their examinations, the Council hope that the Members will do their

best to further the endeavours that are being made to raise the standard of workmanship in that direction.

A petition was presented by the Council against 'The Steam Engines and Boilers Bill,' but they saw no reason to object to the 'Quarries Bill.'

The Council have to thank Mr. Stanley G. Bird and Mr. J. Howard Colls for the pictures and photographs they have so kindly presented to the Institute, and hope the example thus set will be followed by other Members.

Audited accounts of the funds of the Institute, and of the Library and Benevolent Funds, for the past year, have been prepared for the information of Members.

In accordance with the Articles of Association, the President, Mr. J. Howard Colls; one of the Vice-Presidents, Mr. George Burt; the Treasurer, Mr. George Plucknett; one of the Auditors, Mr. George Burt, jun.; and four Members of the Council, Mr. Woodman Hill, Mr. W. S. Horner, Mr. Robert Neill, jun., and Mr. Joseph Randall, retire, but are eligible for re-election."

The Chairman, in moving the adoption of the report, said that he was very pleased to state that the papers read by members seemed to be appreciated, and he hoped they would continue to be supported in the future as they had been in the past.

The motion for the adoption of the report having been agreed to, Mr. George Burt, J.P., was elected President for the ensuing year, Mr. R. J. Waller as Vice-President; and Mr. H. H. Bartlett, Mr. H. Hill, Mr. A. J. Mansfield, and Mr. R. Neill, jun., were elected on the Council. Mr. G. Plucknett was re-elected as Treasurer, and as Auditors Mr. George Burt, junior, and Mr. H. I. Sanders were elected. Mr. J. Howard Colls was elected a Member of the Council on his retirement from the office of President, for which service he was accorded a very cordial vote of thanks.

THE ARCHITECTURAL ASSOCIATION.

THE seventh ordinary meeting of this Association for the present session was held on the 20th inst., in the meeting-room of the Royal Institute of British Architects, Mr. John Slater, B.A. (President), in the chair.

Previously to the ordinary meeting, a special business meeting was held to consider some proposed alterations of the rules.

Mr. W. J. H. Leverton proposed,—

"That this special business meeting, especially called to determine the proper interpretation of Rule 22, is of opinion that, judging from the wording of the rule, the practice of the framers of the rule, and of their successors for seven succeeding sessions, the representatives of the Classes on the Committee were intended to be entirely distinct from and in addition to the ten elected members."

[Rule 22 is as follows:—

"The Committee shall consist of

The President,	
Two Vice-Presidents,	
Two Honorary Secretaries,	Elected by the Association.
The Treasurer,	
The Assistant-Treasurer,	
The Librarian,	
Ten Ordinary Members,	

A representative of each Class, and the Chairman of each Provincial Branch.

Six members of the Committee shall form a quorum."]

Mr. A. O. Collard seconded the resolution, which was supported by Mr. Hugh Stannus, and opposed by Messrs. Cole A. Adams, J. Douglass Mathews, A. B. Pite, Aston Webb, W. H. Atkin Berry (who, taking a figure from political controversy, said that if Mr. Leverton's motion were adopted the representatives of the "Classes" would, by virtue of their number, completely override those of the "masses," or the general body of members), T. E. Pryce (Hon. Sec.), and H. O. Cresswell. On being put to the meeting, thirty members voted for the resolution, and the great bulk of the meeting against it. The Chairman therefore declared it to be lost.

The meeting then proceeded to discuss certain proposed alterations of rules, contained in a printed schedule, but as the business meeting had lasted for two hours, it was decided to adjourn it to the 3rd proximo, at half-past six o'clock.

The business of the ordinary meeting was then proceeded with, when the following new members were elected, viz., Messrs. J. Hardman, D. Newman, A. M. Philips, A. E. Symes, C. E. C. Cordery, E. Farrar, W. K. Parry, H. Porter, G. J. T. Reavell, F. J. Thomas, and P. J. Thornhill.

Mr. W. Burrell (Hon. Librarian) announced a donation from Mr. E. C. Robins of his book on "Technical School and College Buildings," a vote of thanks being passed to the donor; and

Mr. Somers Clarke, F.S.A., then read a paper on "The Use and Abuse of Materials," which we print on another page.

Mr. F. R. Farrow (Hon. Sec.) announced that the first visit of the session would take place on the 4th of February, to St. Paul's Church, Kensington,—Mr. Arthur Baker, architect.

COMPETITIONS.

Church, Ilford, Essex.—A new church to seat 900 people is about to be built at Ilford. Four architects were invited to send in drawings in competition. The design submitted by Messrs. J. E. K. & J. P. Cutts has been selected.

Board Schools, Great Yarmouth.—At a meeting of the Yarmouth School Board last week, the Building and Site Committee reported that they had inspected the competitive plans sent in for the new school at Cobholm Island, and had selected the one marked "Sunlight." The Chairman, in moving the adoption of the report, observed that there were two alternative plans, marked A and B., with the motto "Sunlight." The Committee were unanimous that those plans were the best and, therefore, should be taken, but which of the two alternative plans they preferred to leave until they had a consultation with the architects, viz., Messrs. Bottle & Olley. Mr. T. J. Saul seconded, and a day was fixed for the Committee to meet the architects.

OBITUARY.

Mr. John Pennethorne.—The death is announced of Mr. John Pennethorne, which took place at his residence, Hamstead, Isle of Wight, on the 20th inst. Mr. F. C. Penrose, in a letter to the *Times*, says of Mr. Pennethorne:—

"He will be remembered with gratitude by archæologists for his researches on the scientific principles of the Greek architects. He was the first to observe that the horizontal lines of the architecture in the Doric buildings at Athens are constructed in delicate convex curves instead of straight lines, and he claimed that to this circumstance is due much of the peculiar grace which educated observers had previously recognised. Unhappily, failing health prevented his having any opportunity of embodying in practice as an architect the principles he had learnt from his studies. He nevertheless published, at great cost to himself, in 1878, a very remarkable folio work on 'The Geometry and Optics of Ancient Architecture,'—a work which shows in great detail the evidences of careful design in Egyptian art, and enlarges also on the extraordinary perfection of ancient Greek architecture.

He was a younger brother of the eminent architect Sir James Pennethorne, Surveyor to her Majesty's Works and to the Commissioners of her Majesty's Woods and Forests, who died in 1871."

Mr. Cornelius Sherlock.—Mr. Cornelius Sherlock, architect, Liverpool, died on Sunday last, at his residence, Elm House, Childwall, after an illness of some weeks. The *Liverpool Post* says he was articled to Mr. Peter Ellis, architect, recently deceased. He was employed by Sir Andrew Walker as architect for the erection of the Walker Art Gallery, and afterwards built the addition to that structure. Later, he was retained by the Corporation as architect for the Picton Reading-room. For Sir A. Walker he also did a good deal of work at various times and places, among other things rebuilding The Grange, at Gateacre. His remains were interred in Childwall Churchyard on Wednesday last.

Mr. John Waddell.—The death took place last week of Mr. John Waddell, the well-known contractor, whose name has been associated with much of the important engineering work, both in England and Scotland, during the last thirty years. He died at his residence in Edinburgh on the 17th inst., after a complicated illness extending over several weeks. The *Scotsman* says that the severe strain which the execution of his extensive schemes had put upon his strength began to tell upon him some months ago; and he began to relax his efforts with a view to retiring from business altogether. But the rest which he took came too late; and, after a life of unusual energy, he has died in the sixtieth year of his age. Besides a large number of railways carried out by him, he constructed the "James Watt" Dock at Greenock, the new bridge across the Thames at Putney, and the Mersey Tunnel with its adjacent railways. As may be inferred from the mention of these undertakings, Mr. Waddell was one of the largest employers of labour in the kingdom, and, says the *Scotsman*, his relations to his men were always singularly friendly.

Mr. Thomas Haselden.—The death is announced of Mr. Thomas Haselden, architect, Bolton, which took place on the 20th inst. at his residence, Sharples, after a few days' illness. He enjoyed a good local practice, and was only forty-two years of age.

Sale of Freehold Building Land at Enfield.—On Monday evening last Mr. Richard J. Collier put up for sale, at the Holly Bush Inn, Chase Side, Enfield, sixty-five plots of freehold building land, forming a portion of the Cedars Estate. All the plots were sold, fetching a total of 1,232*l.*, exclusive of Cedar Lodge, which was sold by private treaty for 293*l.*

FIREPROOF PAINT AS A PRIMING.

THE CYANITE COMPANY (LIMITED) *v.* LUCAS AND SON.

A DECISION in favour of the plaintiffs for 312*l.*, the full amount of their claim, has just been given by the official referee, Mr. Hy. W. Verey, in this action, which was heard at the Law Courts on the 22nd and 23rd of December last.

The case occupied two whole days, the claim being for fireproof priming, together with labour, supplied by the plaintiffs, at the National Agricultural Hall, Kensington, in 1886, at the order of the defendants, who were the builders.

Mr. Masterman appeared for the plaintiffs, and Mr. Jones for the defendants.

In the course of the evidence, it transpired that the defendants had by force stopped the plaintiffs during the progress of the contract, alleging that their (defendants') paint would not dry properly when applied over the plaintiffs' fireproof priming. Mr. J. G. Buckle, A.R.I.B.A.., and other witnesses, however, testified that the cyanite priming was in every way suitable, where they had used it, as a priming for ordinary paint.

The decision, giving the plaintiffs their full claim of 312*l.*, which embraces damages for loss of profit on incomplete portion of the contract, also affirmed that the defendants' counter-claim for 90*l.* could not be maintained, such counter-claim being for knotting alleged by the defendants to be necessary between the priming and the paint.

SEWAGE TREATMENT BY ELECTRICITY.

SIR,—In drawing attention [p. 41, *ante*] to my systems of treatment of sewage and water by electricity, you are in error on some very important points.

With regard to the sewage process, I wish to simply say that no copper whatever is used in it, and that the gas which supports the scum is hydrogen only, the oxygen having been utilised.

In the treatment of water it is not a fact that acid is necessary for the purpose of passing a current through it.

These corrections will dispose of the truly alarming figures at the conclusion of your remarks.

WILLIAM WEBSTER, JUN., F.C.S., &c.
8, *St. Martin's-place, Trafalgar-square, London, W.C.*, Jan. 25, 1888.

"SHORT QUANTITIES."

SIR,—I am not desirous of entering into a controversy respecting this case, but as the letter headed "Short Quantities" in your current issue [see p. 50, *ante*], is calculated to convey an altogether erroneous impression, it is necessary that I should say a few words upon the subject. Mr. Northcroft commences his letter with a very imperfect history of the circumstances leading up to the action, and then gives a partial analysis of the judgment. I need not trouble you with a correction of the historical portion, nor with any attempt to set Mr. Northcroft right when he argues matters of law with Mr. Justice Stephen. My principal object in writing is to say that had the case been carried through, we were prepared with a complete answer upon its merits. Mr. Northcroft, however, does not concern himself with the defence; indeed, his treatment of it may be compared with the treatment of prisoners in certain Oriental countries where they erect the gallows first, and try the prisoner afterwards. . . . . I may here mention that, in the course of my practice, I have prepared the quantities of some twenty-five churches and a large number of other buildings, and have never before this action been asked to pay a shilling for deficiencies either by architect, client, or builder. As to the conclusion of Mr. Northcroft's letter, it seems to me as illogical as the heading is misleading. He agrees with the dictum of the Judge "that quantities ought always to be made a part of the contract,—a dictum entirely in the interest of contractors,—and then proceeds to advise the Master Builders' Association to press for an appeal against the verdict. Before taking this step I would venture to suggest that the Master Builders' Association consider the general conditions of the specification which formed part of the contract. F. STONE.

January 24, 1888.

SIR,—A letter from Mr. Northcroft appears in your issue of this week which, we feel, requires a little correction. The writer quotes inaccurately a clause from our contract, to the effect that the builders were to "compare quantities with the site and drawings, as no after-claim would be allowed," while, in

fact, the quantities are nowhere mentioned in the contract, and the clause in question simply provides that "the builder must compare drawings with the site, as in case of a mistake being made in his estimate, no after-claim will be allowed." Of course, we examined the site and drawings, and if *we* had made any mistake in our estimate should have made no claim. But neither we nor any one else would imagine that this clause in an agreement between ourselves and the building owner alone would be held to completely shield the surveyor, who is no party to the contract, and is nowhere mentioned in it, whose fees were paid by us, and from whom we claimed on the ground of established custom of liability to the contractor, for any undeniable errors in the bills.

There is no dispute between the owner or architect and ourselves; the building was finished long ago, and the architect was one of our witnesses.

The judgment really states that the builder is responsible for payment of surveyors' fees, while the surveyor is in no way responsible to him in turn for correctness of his quantities.

PRIESTLEY & GURNEY.

Hammersmith. Jan. 21.

P.S.—We should add that the case has been entered for appeal.

SIR,—The thanks of all your readers are due to Mr. Northcroft for calling attention to the *dicta* laid down in the case of Priestley *v.* Stone; and, taking them to have been just as stated by Mr. Northcroft (as no doubt they were), this action would seem to have been decided upon principles altogether contrary to justice, and to the law as often laid down in "quantity" cases.

Without recapitulating the points referred to by Mr. Northcroft, I may say that (in common, I believe, with all who have had any experience in these matters), I agree with him that the decision arrived at upon the grounds stated is greatly to be deplored. But in saying this I am bound also to remark (from what I heard of the case before it went into court), that the defendant had a very good defence upon the merits. That, however, is beside the question, as the merits were not taken into consideration at all, but only legal quibbles contrary to common sense and law, and, moreover, contrary to the well-established custom and practice of the profession.

My immediate object, however, is not to foster further discussion on this case, but to again call attention to the crying evil which exists in enormous proportions in our midst; and that is, the folly, waste of time, ruinous cost, and bitterness engendered by taking building or quantity disputes to a tribunal composed of those who understand nothing of its customs, technicalities, or intricacies, and which simply flounders through the cases in an utterly benighted and bewildered fashion.

Any one who has had experience in getting up evidence, and in coaching solicitors and counsel, must have been struck with the tremendous difficulty in getting the mere elementary principles of a quantity case into the legal mind; and when it comes to the hearing, I state it mildly, utter dismay seizes on the experts, who have to listen to, but may not correct, the extraordinary mistakes and misapprehensions of Judge and of counsel. The verdict is a toss up; but the costs are a dead certainty.

I have lately heard two or three cases in which the sum in dispute had vanished into utter insignificance compared with the costs, long before the matters came to a hearing.

How long is this to continue? Well, as long as plaintiffs and defendants are so foolish and blind to their own interests as to allow their disputes to be decided by people who do not understand them.

What is the remedy? A general and all round determination on the part of architects, surveyors, and builders, to refer their cases to experts, and to exclude lawyers in every instance. I believe that both parties, if they were allowed to have their own way, would invariably prefer that course; but the difficulty lies at the initial stage of the dispute. A fancies that he has a claim against B, but B does not admit the shadow of a pretence for such an assertion, and refuses either to pay or to refer. A has then no alternative but to issue a writ, and then little short of a miracle can get the case out of the legal clutches.

What I would urge upon all architects, surveyors, and builders is, to use their utmost endeavours in every dispute in which they are concerned to keep it from the lawyers, and to induce their clients and themselves to agree to an expert; a man who does not confound a "tender" with a "bill of quantities," (as I heard a Judge do the other day),—one who is familiar with every technicality, and who, having facts to find, knows how to find them; a judge who can give a definite appointment to hear a case, and when he hears it, can not only understand it, but give an award in a reasonable time, and at a cost utterly insignificant as compared with what usually follows a legal settlement. SIDNEY YOUNG.

5, Henrietta-street, Covent Garden, W.C.
January 24th, 1888.

BOOK-KEEPING.

SIR,—In reply to "Subscriber's" letter [pp. 33, 50, *ante*], we beg to say our well-known Kain's system of book-keeping, though primarily intended for solicitors, adapts itself with slight modification to any style of business, whether mercantile or professional. KAIN, BROWN, & CO.

THE TITE PRIZE COMPETITIONS.

SIR,—I ask your influence to condemn the unfair practice of awarding this prize to French designs, which are worked out in the Paris School, detailed by several students, and analysed and brought to perfection by teachers.

An observer of these competitions could not fail to see the predominance of French work and the almost total absence of Italian, a fact easily accounted for by the knowledge of the competitors that to follow Italian is to be handicapped.

If the prize is intended "for the study of Italian architecture in England," in common justice let it be so, and not to Ecole des Beaux-Arts men, brought from their mill by the last boat from France.

J. J. PEARSON.

SIR,—It is a fact worthy of remark, in face of the frequent aspersions by British architects on the training at the Ecole des Beaux-Arts of Paris, that for the past five years the Tite Prize or a Medal of Merit (in some cases both) has been awarded to students of one Paris *atelier*, that under the direction of M. J. L. Pascal. The record is as follows:—1884, Medal of Merit with 10*l.* from the Institute funds; 1885, Tite Prize; 1886, only Medal of Merit; 1887, Tite Prize and one Medal of Merit; 1888, Tite Prize and first Medal of Merit.

Of course, those who worked the competition from Paris had unusual advantages in the way of time otherwise unoccupied, and plenty of good advice, but in two instances the honours were carried off by men who had returned to this country, and who worked under the same conditions as the other competitors.

I leave the intelligent reader to draw his own conclusions. VERB. SAP.

*** We are not aware that "frequent aspersions" are made by English architects as to the training in the "Ecole des Beaux-Arts." As far as our recollection goes, the "Ecole" system has been the subject of a good deal of praise lately on this side of the Channel.

"BRASSES."

SIR,—In the discussion which followed the reading of Mr. Oliver's interesting paper at the Architectural Association [see p. 32 *ante*], Mr. H. D. Appleton asked Mr. Oliver whether he was cognisant of any good process for reproducing these things in books, not in a negative but in a positive form, as the brasses themselves really looked.

I enclose herewith a sheet of modern brasses which are produced by photo-lithography from heelball rubbings, and I think this is what Mr. Appleton wishes to see for this kind of illustration. This effect is produced by a double process of photography, firstly from the rubbing, which gives a negative, and secondly from the negative, by which means a positive is obtained.

The only reason why brasses have not previously been illustrated by this means is, I imagine, that they are so different in appearance to the rubbings in which form archæologists are used to see them.

Birmingham. W. THOMAS.

*** The illustrations enclosed are very satisfactory in effect.—ED.

BRICKWORK IN FROSTY WEATHER.

SIR,—This is an important subject, affecting as it does the employment of a large class of workmen during the season when they require most food and fuel.

It would be valuable information if the Consul-General, to whose report you alluded [p. 23, *ante*], could give some authoritative particulars of the weather in Norway, where, according to his report, the work is carried on throughout the winter. It is not hard dry frost which affects new brickwork so much as frost following soaking rain. I am told that these conditions prevail in Norway in November, but that after that month the weather permanently settles for the winter,—cold and very dry without thaw or rain. Snow, of course, is easily dealt with, as it can be brushed away before it melts. Is brickwork carried on in Norway during November? And is it correct that during that month the weather there is damp, with driving rains alternating with snow storms, snaps of frost, and thaws? M.

New Roman Catholic Cathedral for Bute.—It is reported that the Marquis of Bute intends to build a Roman Catholic Cathedral in Bute. Although the details have not yet been definitely settled, it is understood the building will cost about 16,000*l.* The site will be to the south of Rothesay, adjoining the Orphanage which is supported by Lady Bute.—*Scotsman.*

The Firm of William Brass & Son.—It was with much regret that we last week (p. 54, *ante*) announced the death of Mr. William Brass, the late senior partner of this firm. We are now informed that the business will be carried on under the same title as heretofore by Mr. W. Brass, junr., the surviving partner, who will personally conduct its management.

The Student's Column.

IRON.

IV.—PIG-IRON.

THE word "metal," which appears to have been derived from a Greek word signifying "in quest of other things," seems to appropriately apply to iron, for it is in quest of its use, either as cast iron, steel, or wrought iron, that the pure iron is searched for. Of these three classes, cast iron is the most brittle, but as it is easily melted at a high temperature, it can be converted into castings by being run into moulds or impressions of sand, so laid out that the fluid metal fills up the shape required. There are eight varieties of cast iron in its original condition as sold in pigs after the metal is extracted from the ore. These varieties can be distinguished by their colour, and are spoken of as dark grey, mottled, and white pigs, the subsequent treatment of which, according as the metal is to be employed for iron castings, for steel, or for wrought iron, we shall endeavour briefly to point out, after we have alluded to their special peculiarities.

The grey quality bears the highest price in the market, and is usually spoken of as foundry iron. A dark kind, containing from 3 to 5 per cent. of carbon, is suitable for small and delicate castings, being very fluid at a high temperature, and possessing the highest expansion upon solidification, whereas the lighter grey is sufficiently fluid for large castings, and adapts itself better for purposes where strength is required, having a closer grain. Pure iron is rarely seen. It would have a silver white colour, and be of a brilliant, but at the same time not too glaring, appearance, of a crystalline fracture after fusion, and upon rolling would become fibrous. As cast iron it becomes granular or crystalline. In its native condition, iron is too soft to be of much practical use, but it hardens in chemical combination with other substances. As wrought iron, it possesses the property of being both malleable and weldable, as pieces can be forged at a red heat or joined together at a white heat by the aid of a hammer, making one solid piece, equally strong throughout. The fibrous condition of wrought iron is chiefly produced by the process of rolling adopted in its manufacture. It can also be drawn into rods of different diameters, even into fine wire. This property of ductility is absent in cast iron, but exists in steel to a greater extent than in wrought iron when the steel is carefully worked at a comparatively low temperature. Cast iron can not be forged.

The pig-iron from which cast iron and wrought iron, with all their intermediate and connected stages, are made, always contains, in addition to carbon, certain impurities, chief among which are silicon, sulphur, phosphorus, and manganese. The carbon is found both in a mechanical and a chemical condition, and the class to which the metal belongs depends not only upon the amount, but also upon the condition in which the carbon exists. A furnace in good working order provided with fuel in large proportion to the amount of ironstone will yield a grey iron, while a smaller proportion of fuel will produce a white iron. Slow cooling favours a gray production; rapid cooling a white production. The gray or higher grade pig-irons, then, require more fuel than the lower grade metals. Grey pig-iron contains the bulk of its carbon uncombined, entangled with the iron in a state of freedom known as graphite or plumbago. In white pig-iron the carbon is all, or nearly all, in a state of chemical combination. Grey pig-iron is soft, yielding easily to a chisel, and can be readily filed, while white pig-iron possesses more of the properties of steel. Mottled pig-iron possesses intermediate properties. White pig-iron is too hard and brittle to be manageable by itself, but can be converted into wrought iron at a moderate price. It is then called forge iron, which means that it is intended to be made into bar iron. Grey pig-iron is rich in silicon, which is derived both from the ore and the fuel. It affects cast iron in a very similar manner to carbon, but it renders wrought iron hard, brittle, and difficult to work. White pig-iron is rich in sulphur and manganese,—the latter combining with the iron, causing it to be more fluid, and the former causing the iron to be brittle and hard. The sulphur is derived from the pyrites in the ore and the coal. It has a great affinity for iron. Phosphorus, unlike sulphur, causes the iron to be very fluid, to melt easily, work well in refining, and to be very

manageable for welding purposes, but it reduces its tenacity. There is not much known about the element of aluminium in this connexion. It appears to have a beneficial toughening influence on iron, but decreases the strength when present in large quantity. Arsenic, seldom present, causes iron to be fluid, hard, and brittle. It can be removed from it by refining in the process of conversion into bar iron, and is found to be extremely soft and pure.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

16,312, Adjustable Bench Stop. W. Illingworth.

This contrivance consists of a block of metal with an adjustable slide fitted on to the same. A steel plate is fixed to the slide, and this is toothed for the purpose of insuring a hold on the material with which it has to deal. The slide is secured in the metal block by a clutch, which is worked by means of a screw turned by an ordinary screwdriver.

414, Flushing Water-closets. T. Richmond.

This invention is designed for flushing water-closets more effectually than is ordinarily the case. A receptacle is so arranged as to receive the waste water as it flows down spouts, &c. ; when it fills, it tips up and thus flushes out the closet. It is either automatic in action or may be actuated by pulling a handle.

2,112, Ventilating Soil-pipes. J. T. Harris.

The chief idea of this invention is to construct a simple-acting valve and hermetically sealed overflow with special access to the soil-pipe. The closet is compact, and to a great extent self-contained.

2,113, Raising and Lowering Sashes. A. Walker and D. Bell.

The objects of this invention are security and convenience. The sashes are allowed to swing inwards for convenience in cleaning the windows. The "parting beads" are dispensed with, the battens are hinged, and guide-blocks slide in vertical grooves in the frames. A screw spindle with rotating nut actuates the movement of the sashes, and each sash may, with the mechanism described in the specification, be easily raised, lowered, or swung open.

2,505, Extensible Roofs, Awnings, &c. E. Horbaczewski.

This patent relates to a movable roof to serve as a protection from the weather, &c. When not in use the roof is folded within a suitable casing. It is comprised of a number of sections, either in the form of a plate or of a lattice girder covered with glass ; these sections are bent at their upper and lower edges so as to be overlapped by the section above, and when stowed away the plates are laid successively one over another in a shutter-box or similar contrivance.

15,002, Ventilation of Water-closets. H. Reinecke.

According to this invention, in the flap or lid is arranged a kind of shallow funnel, which, shutting down directly over the pan, communicates through a tube annexed to it with the outer air. The hinge is tubular, and formed specially to facilitate this ventilation, and the closet-room itself is ventilated through a separate funnel, the air being kept pure by avoiding all contact with the soil or sewerage.

NEW APPLICATIONS FOR PATENTS.

Jan. 13.—546, C. Wright, Fastener for Windows, Doors, Fanlights, &c.—554, D. Burns, Chimney Cowls and Ventilators.—562, R. Free, Kilns.

Jan. 14.—589, R. Beecham, Kitchen Ranges.—596, C. Browett, Preventing the Rattling of Windows, Doors, &c.—618, W. Fraser, Air Cushion Water-tap.—621, F. Jewell and W. Mark, Joining Lead and Other Soft Metal Pipes.

Jan. 16.—659, H. Dunn, Pneumatic Speaking-tubes.—673, E. McClellan, Air Inlets for Sewers, Traps, and Drains.—697, J. Haley, Glass, Tiles, &c.—682, E. Gotto and Others, Supply Water to Water Closets, &c.

Jan. 17.—709, G. Bücken, Closing the Opening in the Seat of Water Closets, &c.—735, R. Melhuish, Combination Tool Cabinet and Bench.—736, C. Worssam, Adze or Cutter Block for Wood Planing.—739, B. Suart and H. Hanwell, Roofing and Hanging Tiles.—740, J. Grossjean, Roofs.—741, H. Gear, Plasterers' Laths.

Jan. 18.—786, F. Buckland, Portable Conservatories, &c.—802, F. Winfield, Ventilating Sewers.

Jan. 19.—829, A. Wylde, Fireproof Fire Escape.—847, G. Restall, Disinfectant Container and Supply for Drains, Closets, &c.—852, J. Reed and T. Kennedy, Mantelpieces and Fenders.—858, A. Sieber and J. Nixon, Silent Door Fastener

PROVISIONAL SPECIFICATIONS ACCEPTED.

12,857. H. Waddington, Ventilator.—16,822, J. Smith and H. Glaves, Chimney Cowls.—16,827, J. Short, Combination Architectural and Engineering Tool.(!)—16,858, J. Smith, Ventilating and Disinfecting Drains, Sewers, &c.—17,326, J. Hill, Opening and Closing Fanlights.—17,364, H. Coppin, Speaking Tube Fittings.—17,470, W. Somers, Preparation for Use in Paints and Varnishes.—17,539, D. Marshall, Joints for Pipes.—17,546, J. Bennett and J. Telfer, White-lead.—17,854, L. Wacks, Trigger Action for Opening Doors.—17,924, R. Grocott, Mounts for Door-knobs.—17,968, W. Wilson, Exhausting Cowl and Ventilator.—326, M. Blanchard, Terra-cotta Fireproof Construction.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

1,515, H. Schlichter, Gas-lighting.—1,784, J. Griffin, Saw-sharpening and Setting.—3,073, D. Knowles, Window-sash Fastener. — 6,977, T. Roberts, Partable Terra-cotta Stoves.—12,900, T. Morris, Slate Working Machinery.—13,828, G. Humblet, Hollow Fireproof Slab Partitions, &c.—15,083, R. Payne, Cowl.—17,205, T. Bailey, Window Fasteners.—17,458, J. Horne and S. Hollyman, Chimney Top. — 17,483, A. Boult, Concrete Pavements.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

JANUARY 12.

By WORSFOLD & HAYWARD.
(At Dover.)

Dover—6, Effingham-crescent, 38 years, ground-rent 6*l.* 1s. 4d	£680
7, Queen-street, freehold	370
Charlton, near Dover—22, Peter-street, freehold	270

JANUARY 16.

By PHILLIPS, SON, & NEALE.

Commercial-road—38, 40, and 42, Christian-street, 11 years, ground-rent 5*l.*	240
78 and 80, Middle Grove-street, 11 years, ground-rent 3*l.*	90

JANUARY 17.

By EASTMAN BROS.

Leadenhall-street—Ground-rent of 35*l.*, reversion in 36 years, but subject to a Life in his 76th year	830

JANUARY 18.

By DREW & SON.

Mortlake—1, 2, and 3, Tinder Box-alley, copyhold	150
High-street, a brick-built cottage, freehold	280
A plot of freehold land	25

By G. A. BICKERTON.
(At Richmond.)

Kew, Mortlake-road—Windsor Lodge, 79 years, ground-rent 8*l.*	600

JANUARY 19.

By BALL, NORRIS, & HADLEY.

Brompton—16, Montpelier-street, 18 years, ground-rent 5*l.* 5s.	450
The Lease of the above, being a profit rent of 35*l.* term 18 years	170
Highgate—11, Bishop's-road, 85 years, ground-rent 8*l.*	430

By NEWBON & HARDING.

Gray's Inn-road—No. 212 ; and 1, Wilson-street, 24 years, ground-rent 14*l.*	740
Islington, Upper-street—The Letting of seventeen plots of land on lease for 80 years, produced in all 341*l.* a year, averaging about 20*l.* each lot.	

By REYNOLDS & EASON.

Mile End, Grove-road—An improved rent of 17*l.* a year, term 12 years	135
Hertford, Aldenham, near—A plot of freehold land	220
Hendon, near—A plot of freehold land, 1a. 0*r.* 3*p.*	725
Commercial-road—2 to 10 even, Buross-street, 28 years, ground-rent 13*l.* 15s.	795
23, 25, and 27, Buross-street, 32 years, ground-rent, 5*l.* 10s.	260

JANUARY 20.

By DOWSETT & Co.

Peckham—A ground-rent of 10*l.*, reversion in 70 years	200
Frankton-road, a plot of land, 70 years, ground-rent 1*l.*	250

By MURRELL & SCOBELL.

Kensington—A Ground-rent of 35*l.*, reversion in 16½ years	1,290

MEETINGS.

SATURDAY, JANUARY 28.

St. Paul's Ecclesiological Society.—Annual meeting. 2.30 p.m.

MONDAY, JANUARY 30.

Royal Academy (*Lectures in Architecture*).—Professor Aitchison, A.R.A., on "The History of Architecture," III. 8 p.m.

Society of Arts (*Cantor Lectures*).—Mr. A. Gordon Salamon, on "Yeast, its Morphology and Culture." 8 p.m.

Leeds and Yorkshire Architectural Society.—Professor Barr, B.Sc., C.E., on "Some simple Principles connected with the Strength, Stiffness, and Stability of Structures." 7.30 p.m.

TUESDAY, JANUARY 31.

Society of Arts (*Applied Art Section*).—Mr. J. Starkie Gardner, F.G.S., on the "Monumental Use of Bronze." (Mr. E. J. Poynter, R.A., will preside.) 8 p.m.

Institution of Civil Engineers.—(1) Further discussion of Sir Bradford Leslie's paper on "The Erection of the 'Jubilee' Bridge carrying the East Indian Railway over the River Hooghly, at Hooghly." (2, time permitting), Mr. A. C. Hurtzig, on "The Alexandra Dock, Hull." 8 p.m.

Senate House, Cambridge.—The Rev. G. F. Browne, B.D. (Disney Professor), on "Sculptured Stones of pre-Norman type in the British Islands," I. 2.30 p.m.

WEDNESDAY, FEBRUARY 1.

British Archæological Association.—Mr. J. T. Irvine on "The Mediæval Master Mason's Design for the West Front of Peterboro' Abbey." 8 p.m.

Civil and Mechanical Engineers' Society.—Mr. T. B. Lightfoot on "The Use of Ammonia as a Refrigerating Agent." 7 p.m

Society of Arts.—Mr. D. F. Schloss on "The Sweating System, or the Functions of the Middleman in relation to Labour." 8 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting. 8.30 p.m.

THURSDAY, FEBRUARY 2.

Royal Academy (*Lectures in Architecture*).—Professor Aitchison, A.R.A., on "The History of Architecture," IV. 8 p.m.

Royal Institution.—Mr. H. Herkomer, M.A., A.R.A., on "Art Education." 3 p.m.

Institution of Mechanical Engineers.—Forty-first Annual General Meeting. 7·30 p.m.

Parkes Museum of Hygiene.—Professor E. M. Crookshank, M.B., on "The History and present Position of the Germ Theory of Disease." 5 p.m.

Royal Archæological Institute.—(1) The Rev. G. F. Browne on "Bradbourne Cross, Derbyshire." (2) Mr. J. L. Andre on "English Ornamental Leadwork." (3) Mr. J. P. Harrison on "Additional Saxon Work in Oxford Cathedral." 4 p.m.

Society of Antiquaries.—8.30 p.m.

FRIDAY, FEBRUARY 3.

Architectural Association.—Mr. R. Phené Spiers, F.S.A., on "Mahometan Architecture." 7·30 p.m.

Institution of Mechanical Engineers.—Annual General Meeting (continued). 7·30 p.m.

SATURDAY, FEBRUARY 4.

Architectural Association.—Visit to St. Paul's Church and Palace Court, Kensington. (See advt. on first page.)

Society of Arts.—Public Conference on the Sanitary Registration of Buildings. 4 p.m.

Association of Public Sanitary Inspectors.—Fifth Annual Dinner, Mr. Edwin Chadwick, C.B., President, in the chair. First Avenue Hotel, Holborn, 6 p.m.

Miscellanea.

International Exhibition at Brussels.—On Tuesday last, at the Mansion House, the Lord Mayor presided over a meeting of the exhibitors and others interested in the forthcoming International Exhibition. Mr. Lee Bapty, as Commissioner-General for the British Empire section, explained that the exhibition was situated in one of the best quarters of Brussels, and quite close to the most fashionable portions of the city. The grounds were already laid out, having been utilised at the Exhibition of 1880. This was the first Exhibition held in Brussels which had the support of the King and the Government and the co-operation of the State Council of Brussels. The building was rapidly approaching completion, and would be opened, according to present arrangements, on the first Saturday in May. Applications for space in the Belgian section were very large ; in fact, three times as much as the building could accommodate. Nearly all other countries were co-operating, and there were no politics in the way. With a view to promoting a British section, he went to Brussels, and in an interview with the committe found that the charges for space, and other restrictions connected therewith, were such that he could not see his way to advise British people to exhibit. A separate building had since been erected for the accommodation of the British section, with a portion of the materials used at the Royal Jubilee Exhibition at Manchester, and he need scarcely say that it was well suited for the purposes for which it was intended. Resolutions in support of the Exhibition were adopted.

Discovery at Canterbury Cathedral.—The *Standard* says that an interesting discovery was last week made in Canterbury Cathedral. Thomas Bradwardine, commonly called Doctor Profundus, a learned theologian, was Archbishop of Canterbury for less than two months in 1349. It is known that the panelling under the great window of Prior Oxenden, in St. Anselm's Chapel, formed part of the tomb of this Archbishop ; but it was not known whether his remains were beneath the stone slab. The tomb has just been opened, under the superintendence of Mr. H. G. Austin, surveyor to the Dean and Chapter, and the skeleton was found, with fragments of cere-cloth, the skull being perfect, and some of the bones. The tomb had been rifled of any ornaments it might have contained, such as ring, crosier, &c., and was full of fragments of stained glass.

Eton College.—The *Morning Post* of the 20th inst. says,—"The improvements at Eton College were commenced yesterday. The alterations will include the pulling down of the old mathematical school, the old museum, and houses adjoining, leaving a space of nearly two acres on which to erect fresh buildings, consisting of a lower boys' chapel, a new museum, lecture hall, mathematical school, and classrooms, at a cost of 50,000*l.*

St. Paul's Ecclesiological Society.—In the ninth annual report of this Society for 1887-8, the Council say that they are glad to state that the position of the Society continues to be thoroughly satisfactory. During the past year, eight meetings have been held at the Chapter House, and papers have been read on the following subjects:—By Mr. B. Edmund Ferrey, on "Symbolism in Ecclesiology"; by Mr. W. Bolton, on "Some little-known Churches near London"; by the Rev. J. C. Bellett, on "The Holy Eastern Church"; by Mr. Athelstan Riley, on "The Archbishop's Mission to the Assyrian Christians"; by the Rev. C. L. Acland, on "The Cathedral of St. Magnus, Kirkwall"; by Dr. J. Wickham Legg, on "Some Liturgical Customs now falling into Disuse"; by Major Heales, on "The Ecclesiology of Gottland"; and by Mr. J. C. L. Stahlschmidt, on "The City Companies." Visits have been made during the year to the following churches, &c.:—To St. Bartholomew, Smithfield, where Mr. Aston Webb described the progress of the Restoration. To Lambeth Palace, where Mr. J. P. Seddon described the architecture, and Mr. S. W. Kershaw the pictures and the contents of the library. To Uxbridge and West Drayton Churches, under the guidance of Mr. C. Montague Neale. To Broxbourne and Wormley. To Cobham, where the church and College were described by the vicar, the Rev. A. H. Berger. To the churches of Bishop's Stortford, where Mr. J. L. Glascock, jun., acted as guide; and Great Hallingbury, which was described by the vicar. A whole-day excursion was made to Salisbury. The cathedral was visited under the guidance of the Very Reverend the Dean, and afterwards sections of the party visited the parish churches of the City and of Stratford-sub-Castle, Britford, and Bemerton. Part II. of the Second Volume of Transactions has been issued during the past year. The financial position of the Society is satisfactory.

Natural Gas in England.—Mr. Richard S. Bluck writes to the *Peterborough Advertiser*:—"Many of your readers are aware that on the Fletton and Woodstone side of Peterborough there are a number of brickworks, but perhaps they may not know the lower the clay for making bricks is obtained, the less coal it takes to burn the bricks. After getting some few feet down the clay contains natural fuel, and the deeper the clay is dug the more natural fuel it contains. When the bricks made from the lower clay (which is really a shale) are being burnt, they throw out a gas which can be clearly seen burning in the kiln between the bricks, and I wish to point out the great probability of there being at no great distance below the shales now worked stores of natural gas similar to that now used in Pittsburg, Pennsylvania, and lately discovered in North-Western Ohio; and which, if found, would make Peterborough into one of the most important manufacturing centres in the world. Builders in Peterborough are aware that bricks can now be bought cheaper at the Fletton and Woodstone yards than anywhere in England, the reason being the coal bill is so much reduced since the lower shales have been made into bricks. I would most respectfully ask the Peterborough Town Council to consider the desirability of boring down to see if the gas is below the town of Peterborough. As a matter of course, it is needless for me to point out to so able a board of business men how natural gas, if found, would find employment for every man in the district who was willing to work, how it would increase the value of all property in the neighbourhood, and cause manufactories and new industries to spring up on every side."

Pengelly House.—This house, at Cheshunt, was, with its contents, totally destroyed by a fire which broke out within its walls on Friday last. The house, which had been untenanted for some years past, stood at Church Gate, Cheshunt. It was formerly the residence of Sir Thomas Pengelly, Chief Baron of the Exchequer. Sir Thomas, together with some of the circuit and local officers, fell a victim to gaol fever at the Blandford Assizes in 1730. Here, too, was the later home of the Lord Protector, Richard Cromwell, who on returning to England *circa* 1680 took up his residence at Cheshunt by the name of Clarke. He lived there until his death in 1712, peaceful and forgotten, and leaving two daughters. Cheshunt Park was built by Mr. Oliver Cromwell (died 1821), a solicitor of London, and lineal descendant of Henry, son to the Protector.

British Archæological Association.—To the meeting on Wednesday, January 18th, Mr. Thos. Blashill in the chair, Mons. Schuermans, of Liege, forwarded particulars of the discovery of Roman sculptures built up into the later Roman walls of Grenoble. The date of this second use is about the beginning of the fourth century, as is attested by an inscription. Mr. Earle Way exhibited some artistic pieces of Delft ware found on the site of the palace of the Dukes of Suffolk in Southwark. Mr. Loftus Brock, F.S.A., described a canette of Flemish work of the sixteenth century. Mr. J. T. Irvine forwarded a collection of sketches of churches in Northamptonshire, including one of a curious inscription at Water Newton. Dr. T. G. Walker exhibited a fine collection of antiquities recently found near Peterborough, among which was a remarkable fibula of early Saxon date, the hammer of Thor being represented in a conspicuous position. Mr. Bodger exhibited a capital series of Roman coins, also found near Peterborough, and a collection of leaden dumps, supposed to have been used in playing some popular game, but which were probably used as small change at a time when nothing smaller than a silver penny was in circulation. Mr. C. H. Compton referred to the old custom of providing a powdering closet in houses of the time of Queen Anne, in which took place the process of powdering a lady's hair after the toilette had been otherwise completed. The chairman, in reply, spoke of the existence of a small room, frequently found in houses of the date named, and fulfilling the requirements. In Kensington-square some of these rooms project from the back of the houses. A paper prepared by Mr. George Payne, F.S.A., on Ancient Roads, was read in the absence of the author by Mr. de Gray Birch, F.S.A. The course of the lower road from Gillingham to beyond Faversham was traced as a specimen of an ordinary country lane of uncertain age. The number of ancient sites which are passed prove the road in question to be of remote antiquity. It ends at a British earthwork in Bigbury Woods. A second paper, on some recent discoveries in Winchester Cathedral, by the Rev. Canon Collier, was then read.

Mr. Hubert Herkomer on "The Walker School."—Mr. Hubert Herkomer, Slade Professor at Oxford University, delivered on the 19th inst. at the Royal Institution a lecture on "The Walker School." He said he regarded Frederick Walker, who died at the age of 36, in 1875, as the most original painter of the present generation. Walker's marked characteristic was his combination of drawing with tone and of composition with colour. Some artists can draw, but not design; some can design but not draw; some can colour, but with no tone. All colourists have commenced cold, and some have ripened with time. Turner before he reached his rich golden period was cold. Turner's gold, however, was in sunsets. Walker found it in the grey day of England, and in appreciating this he found a local colouring to every object. He was true to nature, but saw nature with fresh eyes. He was thoroughly English, not only in his subjects, but in his study of English atmospheric effects, yet his work had found ardent admirers in other countries. Professor Herkomer spoke frequently of his own experiences as illustrating what careful watching of nature it required through many years to acquire Walker's way of seeing colour.

Glasgow Architectural Association.—The fifth lecture of the present session of this Association was delivered on the 18th inst., by Mr. David Robertson, I.M., his subject being "Wright Work," with special reference to its measurement. There was a large attendance, the President occupying the chair. An account was given of the various kinds of wood met with in buildings, their qualities described, and some of the most notable examples of carpentry referred to, from Egyptian down through Mediæval to recent times. The Glasgow practice of forty years ago was contrasted with the present, the introduction of labour-saving machines, and the establishment of saw-milling as a separate trade, having materially affected the joiners' shop of to-day, and not altogether for the better. Some practical hints on the artificial preservation of timber were given in conclusion, and a series of specimens of woods displayed. After some remarks, a hearty vote of thanks was awarded Mr. Robertson.

Manchester Water Supply.—The Waterworks Committee of the Manchester Corporation, at their meeting on the 19th inst., had this question under their consideration, and they announced that at no time for many years past has the stock of water at the commencement of the year fallen so low as it is now. The consumption also is upwards of 2,000,000 gallons per day in excess of what it was in 1879, when the stock fell to a very low point, but this year the water in stock is even less than it was then.

PRICES CURRENT OF MATERIALS.

TIMBER.	£.	s.	d.	£.	s.	d.
Greenheart, B.G. ....ton	6	10	0	7	15	0
Teak, E.I. ....load	8	0	0	12	10	0
Sequoia, U.S. ....foot cube	0	2	8	0	3	0
Ash, Canada ....load	3	0	0	4	10	0
Birch ,, ...	2	0	0	3	10	0
Elm ,, ...	3	10	0	4	10	0
Fir, Dantsic, &c.	1	10	0	4	0	0
Oak ,, ...	2	10	0	4	10	0
Canada	3	0	0	6	0	0
Pine, Canada red	2	0	0	3	10	0
,, yellow	2	0	0	4	0	0
Lath, Dantsic ....fathom	3	0	0	5	0	0
St. Petersburg	4	0	0	5	10	0
Wainscot, Riga ....log	0	0	0	0	0	0
,, Odessa, crown....	2	10	0	3	0	0
Deals, Finland, 2nd and 1st...std.100	7	10	0	9	0	0
,, 4th and 3rd	6	0	0	8	0	0
Riga	5	10	0	7	10	0
St. Petersburg, 1st yellow	8	10	0	14	0	0
,, 2nd ,, ...	7	0	0	8	0	0
,, white	6	10	0	8	10	0
Swedish	6	15	0	15	0	0
White Sea	7	0	0	16	10	0
Canada, Pine, 1st	16	0	0	24	0	0
,, ,, 2nd....	10	0	0	15	10	0
,, ,, 3rd, &c....	7	0	0	9	10	0
,, Spruce, 1st	8	0	0	9	10	0
,, ,, 3rd and 2nd	5	0	0	7	0	0
New Brunswick, &c....	5	0	0	7	0	0
Battens, all kinds	4	0	0	10	10	0
Flooring Boards, sq., 1 in., prepared, First....	0	8	0	0	11	6
Second	0	6	6	0	7	6
Other qualities	0	4	0	0	6	0
Cedar, Cuba ....foot	0	0	3½	0	0	3½
Honduras, &c.	0	0	3	0	0	3½
Australian	0	0	2	0	0	3
Mahogany, Cuba	0	0	4½	0	0	7
St. Domingo, cargo average	0	0	4½	0	0	6
Mexican ,, ...	0	0	3½	0	0	3½
Tobasco ,, ...	0	0	4	0	0	5
Honduras ,, ...	0	0	4	0	0	5
Maple, Bird's-eye	0	0	5	0	0	7
Rose, Rio ....ton	8	0	0	11	0	0
Bahia....	7	0	0	9	0	0
Box, Turkey	5	0	0	12	0	0
Satin, St. Domingo ....foot	0	0	5	0	0	9
Porto Rico	0	0	6	0	0	10
Walnut, Italian	0	0	4	0	0	5½

METALS.						
IRON—Bar, Welsh, in London...ton	0	0	0	0	0	0
,, ,, in Wales	0	0	0	0	0	0
,, Staffordshire, London	0	0	0	0	0	0
COPPER—						
British, cake and ingot ....ton	0	0	0	0	0	0
Best selected	0	0	0	0	0	0
Sheets, strong....	90	0	0	0	0	0
Chili, bars	77	0	0	0	0	0
YELLOW METAL....lb.	0	0	0	0	0	0
LEAD—						
Pig, Spanish ....ton	14	5	0	14	7	6
English, common brands....	14	10	0	14	12	6
Sheet, English	15	10	0	15	15	0
SPELTER—						
Silesian, special ....ton	20	10	0	20	15	0
Ordinary brands....	20	0	0	20	10	0
TIN—						
Straits....ton	166	10	0	167	0	0
Australian	166	10	0	167	0	0
English ingots	0	0	0	0	0	0

OILS.						
Linseed ....ton	19	0	0	19	5	0
Cocoanut, Cochin	29	0	0	0	0	0
Ceylon	24	10	0	0	0	0
Palm, Lagos	22	0	0	0	0	0
Rapeseed, English pale	28	0	0	0	0	0
,, brown	24	10	0	0	0	0
Cottonseed, refined	20	10	0	21	0	0
Tallow and Oleine....	25	0	0	45	0	0
Lubricating, U.S.	5	0	0	6	0	0
,, refined....	5	0	0	12	0	0
TURPENTINE—						
American, in casks ....cwt.	1	9	6	0	0	0
TAR—						
Stockholm ....barrel	0	15	0	0	15	6
Archangel	0	10	0	0	10	6

TENDERS.

[Communications for insertion under this heading must reach us *not later than* 12 *Noon on Thursdays.*]

BANGOR.—For the erection of two 17-ft. ovens and hovels, brick-kiln, and chimney-stack, at the Ogwen Tile Works, Bethesda, near Bangor, North Wales. Mr. E. Penn, architect and surveyor, Stoke-upon-Trent. Quantities by the architect:—

Nathan Barlow, Stoke	£1,135	0	0
H. Redfern, Hanley	975	0	0
Thomas Peake, Hanley	950	0	0
Herbert Goodwin, Longton*....	897	0	0
Wm. Snow, Shelton....	896	0	0
C. Dunn, Burslem	883	10	0
J. Windsor, Burslem	827	4	0

* Accepted.

COMPETITIONS, CONTRACTS, & PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

COMPETITIONS.

Nature of Work.	By whom required.	Premium.	Designs to be delivered.	Page.
Public Offices	Swindon (N.T.) Local Bd	Not stated	March 20th	x.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Unclimbable Fence	Kingston-on-Thms. Cor.	*Official*	Jan. 30th	ii.
Road Materials	Bexley Local Board	E. Reeve Boulter	Feb. 1st	ii.
Hotel and Stabling, Frodingham	Hewitt Bros.	E. W. Farebrother	do.	ii.
Road-Making Works, Dartford	Met. Asylums Board	A. & C. Harston	Feb. 4th	x.
Boundary Fencing, Wall Gates, &c., Dartford	do.	do.	do.	x.
Galvanised Iron Pails	Parish of Bermondsey	*Official*	Feb. 6th	x.
Forming and Making-up Roads, &c.	Beckenham Local Brd.	G. B. Carlton	do.	i.
Stabling and Cart Sheds	Hornsey Local Board	T. de Courcy Meade	do.	ii.
Works and Materials	St. Mary (Newington) Vestry	*Official*	do.	x.
New Bridge over River Avon	Bristol U. S. A.	F. Ashmead	do.	ii.
Works and Materials	Chelsea Vestry	G. R. Strachan	Feb. 7th	x.
Chapel, Fencing, Walls, &c.	Ash Burial Board	*Official*	do.	ii.
Wood Pavement	Fulham Vestry	J. P. Norrington	Feb. 8th	x.
Cast-Iron Pipes and Castings	Bath Waterworks Com.	A. Mitchell	Feb. 9th	x.
Alexandra Arcade, Swansea	The Directors	E. Bath	do.	x.
Sewerage Works	Edmonton Local Board	G. E. Eachus	Feb. 14th	x.
New Head Post-Office, Birmingham	Com. of H.M. Works	*Official*	do.	ii.
Works and Materials, Birmingham Sub. Dis.	War Department	do.	Feb. 15th	ii.
Road Materials, Royal Parks	Com. of H.M. Works	do.	do.	ii.
Works and Repairs to Public Buildings	do.	do.	Feb. 16th	x.
Road-Making Works, Chertsey	Prop. Horsell Farm Es.	.....	Not stated	x.
Execution of Works	School Brd. for London	*Official*	do.	x.
Erection of a School	Dover High School Co.	J. O. Smith	do.	ii.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page
Surveyor	Hammersmith Vestry	350*l.*	Feb. 1st	xiv.
Clerk of Works	Barnet R. S. A.	2*l.* 2*s.* per week	do.	xiv.
Surveyor	Accrington Corporation	200*l.*	Feb. 8th	xiv.

BATTERSEA.—For the erection of a new house for the schoolkeeper, on the Battersea Park site (West Lambeth BF), and for providing additional w.c.'s for the girls and infants, for the School Board for London. Mr. T. J. Bailey, architect:—

R. T. Ronald	£870 0 0
King, Bros. & Co.	802 0 0
A. Martin	795 0 0
H. H. Hollingsworth	747 9 0
Stimpson & Co.	725 0 0
J. & C. Bowyer	698 0 0
J. Holloway	690 0 0
W. F. Russell	687 10 0
J. Channon	687 0 0
Norris & Luke	621 0 0
G. Howard	608 0 0
T. Bendon	598 10 0
Simmonds Bros.	588 0 0
W. Johnson	585 0 0
F. R. Turtle*	572 0 0
Newton & Idle	564 0 0

* Recommended by the Works Committee for acceptance.

BRIXTON.—For five houses and shops at Brighton-terrace, Brixton, for Mr. Earle Bird. Messrs. Fowler & Hill, architects. Quantities by Messrs. Fowler & Hugman.—

Lather & Sons	£7,100 0 0
Holloway Bros.	6,505 0 0
King & Son	6,495 0 0
W. Sheppard	6,458 0 0
Holliday & Greenwood	6,333 0 0
Kirk & Randall	6,309 0 0
F. & H. F. Higgs	6,248 0 0
Killby & Gayford	6,220 0 0
W. Downs	6,176 0 0
B. E. Nightingale	6,130 0 0

GREENWICH.—For removing an iron building from the Dennett's-grove site (Greenwich T), and re-erecting it on the land which has been hired at the corner of Kinloch-street and Hornsey-road, Holloway (Finsbury AW), for the School Board for London. Mr. T. J. Bailey, architect:—

T. North	£195 0 0
T. H. Goodsell	187 10 0
J. W. Roy	172 0 0
T. Bendon	115 0 0
T. Cruwys*	110 0 0

* Recommended by the Works Committee for acceptance.

HARLOW (Essex).—For public hall, Harlow, Essex. Mr. John Slater, B.A., architect, 14, Bedford-row, W.C.:—

Henley & Co., Norwood	£1,187 0 0
Shurmur, Clapton	1,044 0 0
Watson, Ilford	976 0 0
Hampton, Hoddesdon	967 0 0
Burton & Son, Sawbridgeworth	958 0 0
Barrett & Power, Hackney	949 0 0
Nicholls, Harlow	918 0 0
Champness, Bishop's Stortford	878 0 0
Sortwell, Harlow	876 15 6
Slater, Cambridge	875 0 0
Orfeur, Colchester	870 0 0
Staines, Newport	830 0 0
Harrison & Crabb, Enfield	829 0 0
Marshall, Ware	800 0 0
Cornwell, Bishop's Stortford	798 0 0
Ellwood & Sons, Sandy	770 0 0

HACKNEY.—For enlarging the school-keeper's house at Globe-terrace (Hackney O[2]), for the School Board for London. Mr. T. J. Bailey, architect:—

J. W. Roy	£183 9 0
Hale & Twitchen	175 0 0
J. & C. Bowyer	175 0 0
S. W. Hawkins	165 0 0
W. F. Russell	157 0 0
F. & F. J. Wood	156 0 0
G. Barker	146 10 0
J. Holland	145 0 0
W. A. Gibbs	143 0 0
E. Lake	142 0 0
Norris & Luke*	129 0 0

* Recommended by the Works Committee for acceptance.

HORNSEY.—For cottage hospital, for the Hornsey Local Board. Mr. T. de Courcy Meade, architect;—

	Isolation Block.	Administrative Block.
Willcock, Wolverhampton	£2,420 0 0	£1,615 0 0
Kerry, Highgate	2,055 0 0	1,650 0 0
Howell & Son, Lambeth	2,050 0 0	1,408 0 0
Nightingale, Lambeth	1,968 0 0	1,463 0 0
Dobbs, Stamford Hill	1,962 0 0	1,437 0 0
Johnson, Wandsworth	1,900 0 0	1,395 0 0
Shurmur, Clapton	1,680 0 0*	1,353 0 0*

* Accepted.

HORNSEY.—For making up new roads, for the Hornsey Local Board. Mr. T. de Courcy Meade, surveyor to the Board:—

	Ridge Road.	Shepherds Hill.	Shanklin Road.	Berkeley Road.	Wolseley Road.
	£	£	£	£	£
Aspinall, Hoxton	1,350	2,309	830	540	1,160
Hindle & Morrish, Bankside	1,325	2,215	823	521	1,129
Bell, Tottenham	1,269	2,151	800	525	1,121
Dunmore, Crouch End	1,100	1,955	673	430	917
Biggs, Birmingham	1,095	1,732	688	446	939
Jackson & Son, Finbsury Park	1,024	1,926	676	437	940
Williamson, Green-lanes	999	1,994	724	474	974
Mowlem & Co., Westminster	992*	1,800*	666*	392*	837*
Hall, Rugby	961	1,661	707	462	822

* Accepted

IPSWICH.—For the erection of a parish room in St. Margaret's, Ipswich, for the Rev. Canon Garratt. Mr. E. F. Bishopp, architect, Ipswich:—

C. L. Woolnough	£445 0 0
G. Kenny	399 0 0
W. Harrison	359 10 0
O. T. Gibbons	312 10 0
R. S. Smith	305 0 0
Thos. Turner	279 15 0
T. Parkington	273 0 0
W. S. Clark, Ipswich (accepted)	257 10 0

LONDON.—For cleaning and repairs to St. Stephen's Church, Canonbury-road, N.:—

Payne & Son	£322 19 0
Dove Bros.	303 0 0
McCormick & Son	204 0 0

LONDON.—For erecting the Lyric Theatre, Shaftesbury-avenue, for Mr. Henry J. Leslie. Mr. C. J. Phipps, F.S.A., architect, 26, Mecklenburgh-square, W.C.:—

Patman & Fotheringham	£27,800 0 0
Bywaters	27,475 0 0
Peto Bros.	27,445 0 0
Green & Lee	27,132 0 0
Stephens & Bastow (accepted)	26,777 0 0

LONDON.—For additions and alterations to the Paddington Branch of the London Joint Stock Bank. Messrs. Isaacs & Florence, architects. Quantities supplied by Mr. L. C. Riddett:—

Edward Conder	£3,795 0 0
J. W. Falkner	3,597 0 0
Wm. Titmas	3,440 0 0
Wm. Scrivener & Co.	3,352 0 0
J. Kinnimont & Sons	3,311 0 0
Perry & Co.	3,279 0 0
E. Lawrance & Sons	3,265 0 0
Kirk & Randall	3,212 0 0
Higgs & Hill	3,164 0 0
Patman & Fotheringham (accepted)	3,142 0 0

LONDON.—For new offices for the British Equitable Assurance Company, Nos. 1, 2, and 3, Queen-street-place, City. Mr. Arthur Sutton Gover, architect. Quantities by Mr. James Schofield:—

Simpson & Son	£15,150 0 0
B. E. Nightingale	14,853 0 0
Trollope & Son	13,984 0 0
Brass & Son	13,981 0 0
Holland & Hannen	13,950 0 0
Mowlem & Co.	13,942 0 0
Kirk & Randell	13,930 0 0
Rider & Son	13,861 0 0
Grover	13,821 0 0
Colls & Son	13,798 0 0
Hall, Beddall, & Co.	13,785 0 0
Chappell	13,558 0 0
Holliday & Greenwood	13,285 0 0
Higgs & Hill	12,840 0 0

LONDON.—For alteration of No. 13 and 13A, Porchester-terrace into flats. Messrs. W. Jacomb Gibbon & J. W. Stanley Burmester, architects:—

D. O. Nunn	£7,547 0 0
Ashby Bros.	5,587 0 0
Gibbon & Son	5,475 0 0
J. O. Green	5,457 0 0
Stimpson & Co.	5,300 0 0
Oldrey & Co.	4,959 0 0
Macfarlane Bros.	4,850 0 0

LONDON.—For rebuilding No. 23, Shaftesbury-avenue, for Messrs. Angel & Son. Messrs. W. & E. Brown, architects:—

Holliday & Greenwood	£3,149 0 0
Gregory	2,877 0 0
Colls & Son	2,820 0 0
Adamson	2,796 0 0
Grover	2,746 0 0
Greenwood	2,745 0 0
Woodward	2,695 0 0
Oldrey & Co.	2,694 0 0
Patman & Fotheringham	2,650 0 0
Lawrence	2,626 0 0
Langley & Pinkum	2,616 0 0

LONDON.—For gasfittings, &c., at the Bedford Arms, Pont-street, Pimlico:—

Buckley & Beach	£160 0 0
Biggs & Co.	158 0 0
W. Winn	144 0 0

LONDON.—For the erection of a warehouse in Turk's Head-yard (178, Oxford-street), for Messrs. F. Edwards & Son, stove manufacturers, 54, Great Marlborough-street, W. Mr. Arnold S. Tayler, architect, 151, Brixton-road, S.W.:—

G. H. & A. Bywaters	£1,033 10 0
Holliday & Greenwood	775 10 0
Geo. J. Hosking	757 10 0
Patman & Fotheringham	728 10 0

[The above figures include the sum of 98*l.* 10*s.* for iron-work, by Messrs. Dennett & Ingle.]

LONDON.—For rebuilding the Britannia beer-house, Cambridge-road, E., for Miss Perou. Mr. Edward Clark, architect, 432, Strand, W.C.:—

Pereira (accepted)	£800 0 0

[Mr. E. Clark, the architect, writes to say that the list of tenders for the above which appeared in last week's *Builder* was incorrect, and was sent without his authority. He says that the above is correct. On the other hand, we have written to the sender of the list, who affirms that the list as we printed it was correct.]

OXFORD.—For the erection and completion of Salvation Army Barracks buildings in Castle-street, Oxford, for "General" Booth. Mr. E. J. Sherwood, architect, 101, Queen Victoria-street, London, E.C. Quantities by the architect:—

W. & H. Castle, London	£2,674 0 0
Wilkins & Son, Oxford	2,645 0 0
J. Munday, Wimbledon	2,480 0 0
S. Hutchins, Oxford	2,467 0 0
Kimberley, Banbury	2,386 0 0
D. J. Jarvis, Oxford	2,337 0 0
C. Curtis, Oxford	2,327 0 0
Castle & Martin, Oxford	2,310 0 0
D. C. Jones & Co., Gloucester	2,167 0 0
F. J. Coxhead, Leytonstone	1,988 0 0
D. Ellwood & Son, Sandy	1,888 0 0
E. Jarvis, Banbury	1,722 0 0

PARKESTON (Essex).—For new schools, Parkeston, Essex, for the Ramsey School Board. Mr. J. Maples, architect. Quantities by Mr. H. Bushell, 1, Finsbury-circus, E.C.:—

Barrett & Sons	£3,139 0 0
J. Webb	2,970 0 0
Diss	2,810 0 0
L. W. Ransome & Co.	2,682 0 0
T. Ridley	2,580 0 0
Dobson	2,580 0 0
Newton	2,500 0 0
Thackray & Sons	2,498 0 0
Everett & Son	2,399 0 0
Jarvis	2,065 0 0

PUTNEY.—For residence, Kingston-road, Putney, for Mr. John Brett. Messrs. Martin & Chamberlain, architects, 106, Colmore-row, Birmingham. Quantities supplied:—

Harrison & Spoomer	£6,558	0	0
Lathey Bros.	6,504	0	0
W. J. Webb, Birmingham	6,445	10	0
Wall Bros.	6,424	0	0
Aviss, Putney	6,341	0	0
B. C. Nightingale	6,323	0	0
Adamson	6,208	10	6
Roberts	6,033	0	0
Barnsley & Son, Birmingham	5,876	0	0

ST. MARY CRAY (Kent).—For the erection of a pair of houses for Mr. H. Tyrer, jun. Mr. St. Pierre Harris, A.R.I.B.A., architect and surveyor, Orpington:—

Taylor & Son	£750	0	0
Holt	719	0	0
Money Marsland	667	0	0
Laslett	615	0	0
Knight	605	0	0
Wood	598	0	0
Owen	595	10	0
Somerford & Son*	587	0	0
Hart Bros.†	539	0	0

* Accepted, subject to modification. † Withdrawn.

TOWER HAMLETS.—For alterations to w.c.s in all departments of the High-street, Bromley, schools (Tower Hamlets, W), for the School Board for London. Mr. T. J. Bailey, architect:—

J. Holland	£173	0	0
King Bros. & Co.	162	0	0
F. & F. J. Wood	160	0	0
W. A. Gibbs	149	0	0
J. W. Roy	147	0	0
Hale & Twitchen*	145	0	0

* Recommended by the Works Committee for acceptance.

TOWER HAMLETS.—For alterations to w.c.s in boys' and infants' departments of the Knapp-road schools, for the School Board for London. Mr. T. J. Bailey, architect:—

S. W. Hawkins	£140	0	0
J. Webb	139	0	0
F. & F. J. Wood	127	0	0
Davis Bros.	123	0	0
Hale & Twitchen	120	0	0
J. Holland	119	0	0
J. W. Roy	119	0	0
King Bros. & Co.	118	0	0
W. A. Gibbs	116	0	0
B. E. Reed*	105	0	0

* Recommended by the Works Committee for acceptance.

YARMOUTH.—For Free Library additions, Great Yarmouth (first portion), for the Free Library Committee of the Corporation. Messrs. Bottle & Olley, architects, Great Yarmouth:—

J. P. Knights, Yarmouth	£2,521	8	0
J. F. Bray, Yarmouth	2,168	0	0
T. G. Leggett, Gorleston	2,140	0	0
G. H. Springall, Yarmouth	2,100	0	0
Jas. Leggett, Yarmouth	2,035	0	0
J. S. Cooper, Yarmouth	2,031	0	0
Rand & Cooper, Yarmouth	2,023	0	0
G. E. Hawes, Norwich	1,990	0	0
R. Davy, Yarmouth	1,962	15	0
T. Howes, Yarmouth	1,943	0	0
Cork & Beech, Yarmouth (accepted)	1,935	0	0
S. Hipwell, Wisbech	1,689	9	0
Warm-air Apparatus.			
Haden & Son, Trowbridge (accepted)	63	0	0

Alterations, 62, *High Holborn*.—For "Thos. Gobey," as printed last week (p. 55), read Sobey. Correspondents should write more distinctly. Time is too short to allow of the checking of every name by reference to the Directory.

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W. & R. (we are obliged to decline publishing such announcements except in the form of an official list of awards).—G. D.—"Speculator" (we are obliged to decline pointing out books for correspondents; see permanent notice to that effect below. Nor are we called upon to act as architectural advisers to those who want professional advice without paying for it).—W. J. A. (all quite true, but it has all been said over and over again in the *Builder*).—W. G. D. (shall have attention).—F. R. F.—A. A. G. W.—J. M.—F. S.—S. Y.—"Indignant" (you will see that an immense number of persons have responded to a much smaller bait than that).—T. W. B. (next week).—E. F. T. (out of date).—T. W. H. (see answer to W. & R.).—E. F. H. (unintelligible).—J. M. P.—C. P. (see letter in this week's number).

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication

We are compelled to decline pointing out books and giving addresses.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news-items) which have been duplicated for other journals, are NOT DESIRED.

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London, Oct. 12th, 1887.

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